



How a Sustainability Group, a Developer, and Voters came together for a Large-Scale, All-Electric Apartment Complex in Newton

October 27, 2023

**Boston
Green Ribbon
Commission**



GRCx is an interactive program series from the Boston Green Ribbon Commission designed to accelerate the implementation of the City's Climate Action Plan by providing high-quality, useful content on climate resilience and carbon mitigation to the Boston community.

www.greenribboncommission.org

Speakers & Panelists



Dan Ruben
Chair, Green Newton



Kent Gonzales
Vice President,
Development
Northland Investment
Corporation



Deb Crossley
Zoning and
Planning Chair,
City Councilor,
Newton



Beverly Craig
Program Director,
Massachusetts Clean
Energy Center



Green Newton / Northland Collaboration

DAN RUBEN

KENT GONZALES

DEBORAH CROSSLEY

BEVERLY CRAIG

Today's Story

- Green Newton (GN)-Northland collaboration
- Result: largest mixed-use Passive House development in U.S.
- How Northland, GN, civic groups overcame opposition
- Green building revolution in MA

Green Newton Background

- ❑ Founded 1990
- ❑ Original focus: public education
- ❑ Gradually ↑ influence in government and business



Green Newton Building Standards Committee (BSC)

- 2018: developers asked GN to endorse their construction projects
- GN needed standards necessary to earn endorsement
- Newton bldg professionals with sustainability expertise
 - Established standards
 - Formed BSC

GN Building Standards Committee: Four Principles

- Target: new multi-family and mixed-use developments
- Focus: ↓ fossil fuel
 1. Passive House (PH) certification
 2. All-electric
 3. Low embodied carbon building materials
 4. Reduce transportation emissions

BSC Principle 1: Passive House

- Well-suited for multi-family, office bldgs (Winthrop Center!)
- Extremely energy efficient; 40% - 60% < previous MA stretch code
- Low operating costs
- Excellent IAQ
- Quiet
- Resilient
- Subsidized in MA

BSC Principle 1: Passive House

Principles

- Insulation: high level, continuous
- Airtight: extremely low air leakage
- Ventilation: Energy Recovery
- Windows: high performance
- Shading strategies let in winter sun, block summer sun

BSC Principle 2: All-Electric

- Heat
- Hot Water
- Cooking

BSC Principle 3:

Low Embodied Carbon Materials

- Embodied carbon: carbon emissions during bldg materials' lifecycle--extraction, manufacturing, transport, construction, disposal
- Steel and concrete: high embodied carbon
- Solutions
 - Design bldgs to use ↓ steel, concrete
 - Low embodied carbon products

BSC Principle 4:

↓ Transportation Emissions

- Smart growth—not sprawl
 - Best locations near transit, jobs, commerce
 - Newton locations usually better than further from Boston
- Car share
- Biking, walking
- EV charging stations

Next Step: Meet with Developers

- GN BSC: asked for meetings with 2 large developers
 - Mark Development: proposal at Riverside MBTA station
 - Northland: Newton Upper Falls
- GN BSC's message: we will support developers who commit to our 4 principles

Housing Politics

Developers need Special Permit from City Council for bldgs
> 20,000 sq ft

- Need supporters--to overcome housing opponents
- Newton: GN perceived as valuable ally
- Climate change: growing concern in Newton
- To gain GN's endorsement, developers listen to our requirements

Meeting with Mark Development

Meeting with Mark Development, December 2018

- 500+ units, shopping, offices (later changed to labs)
- Mark Development agreed to study proposal
- Over time—met us > halfway

Meeting with Northland

Meeting with Northland, January 2019

- 800 units, shopping, offices
- Northland sustainability plan: LEED certifiable...
- GN BSC: must be Passive House to earn our support
- Kent G discouraged: “environmentalists are changing the goalposts” (from LEED to Passive House)

Northland Goes Green

- ❑ Northland hired Steven Winter Associates to study BSC proposal
- ❑ Next 2 years: project kept getting greener (Kent)
- ❑ Northland faced political challenges--city council vote, voter referendum (Kent, Deb)
- ❑ Meanwhile...Passive House surged in MA (Bev)

GN BSC:

Continued Progress

- Worked with ~ 12 developers
- Multi-family, mixed-use, senior housing
- Persuasive
 - Message: stay ahead of curve
 - Identified funding for Passive House
 - Connections with architects, engineers...
 - Action on climate change resonates

GN BSC 2018 Radical Proposals

Now Commonplace, 1

Passive House

- ▣ *Required* for multi-family > 12000 sq ft in communities that passed MA Specialized Stretch Code; 22 and counting

BERDO (Boston, soon Newton) & BEUDO (Cambridge)

Requirements for all large bldgs

- ▣ Net zero carbon emissions by 2050
- ▣ Meet periodic carbon reduction targets
- ▣ Makes efficient, all-electric construction a no-brainer

Electrification

- ▣ *Soon required* for new construction by 10 MA communities

GN BSC 2018 Radical Proposals

Now Commonplace, 2

Low Embodied Carbon

- ↑ recognition
- Products coming to market

Transportation Emissions

- MBTA Communities Act helps
- But housing opponents still slow smart growth
- EV charging stations—advocacy no longer needed

Northland Newton Development

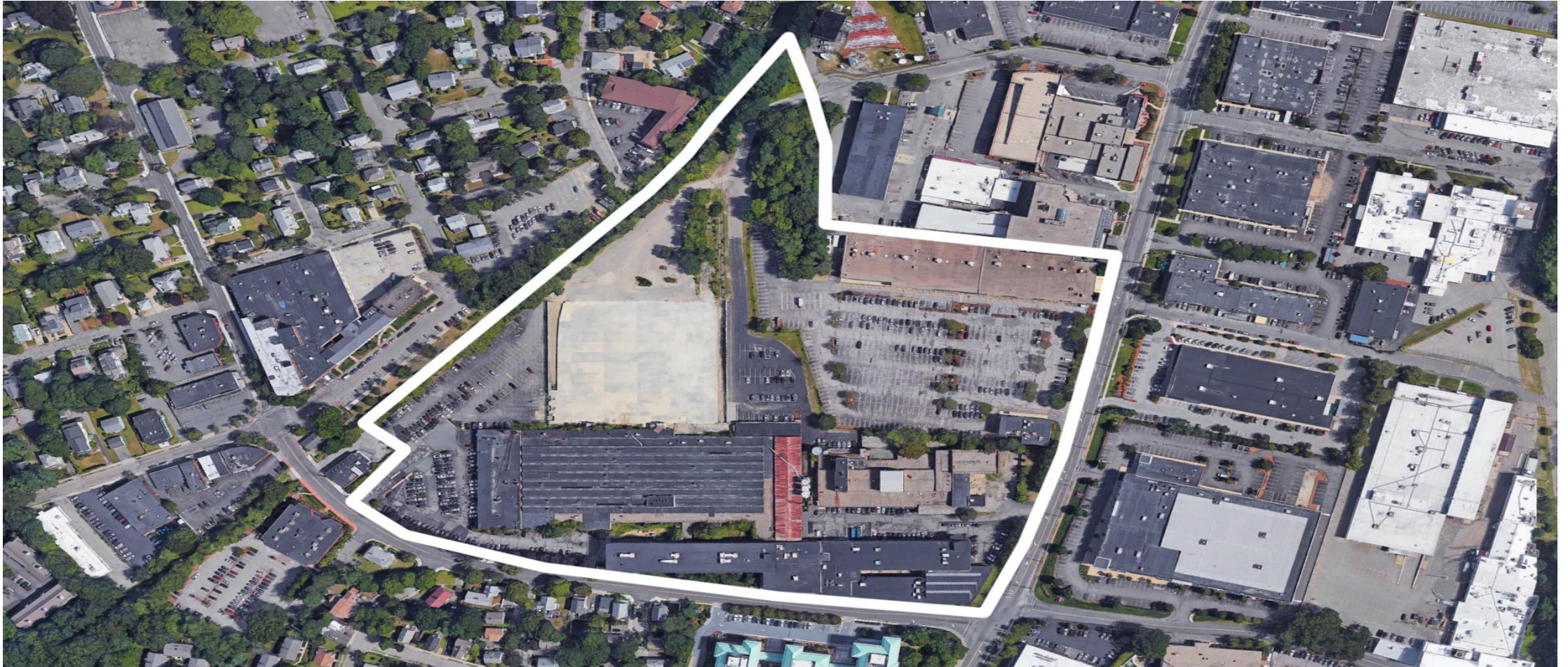


Northland Newton Development Location



Northland Newton Development

Existing Conditions – 22.6 Acres



Northland Newton Development Vision

Model mixed-use development

- Integrated planning & design, permeability, connectivity, and walkability

Vibrant live, work, play environment

- Activated streets, and community spaces

Celebration of local heritage

- Restoration of the historic Saco-Pettee Mill

Expansion of housing options

- Retention of millennials, empty-nesters, and seniors
- Affordable and workforce housing

Forefront of Sustainability

- Commitment to Passive House and LEED

Comprehensive and Forward-looking Transportation Demand Management



Northland Newton Development Program

Site

- 22.6 Acres

Open Space

- 10 Acres

Total Residential

- 800 Units

Affordable Units

- 140 Units

Office

- 180,000 SF

Retail & Restaurant

- 95,000 SF

Parking

- 1,600 car capacity

Transit

- Shuttle to Public Transit



Northland Newton Development

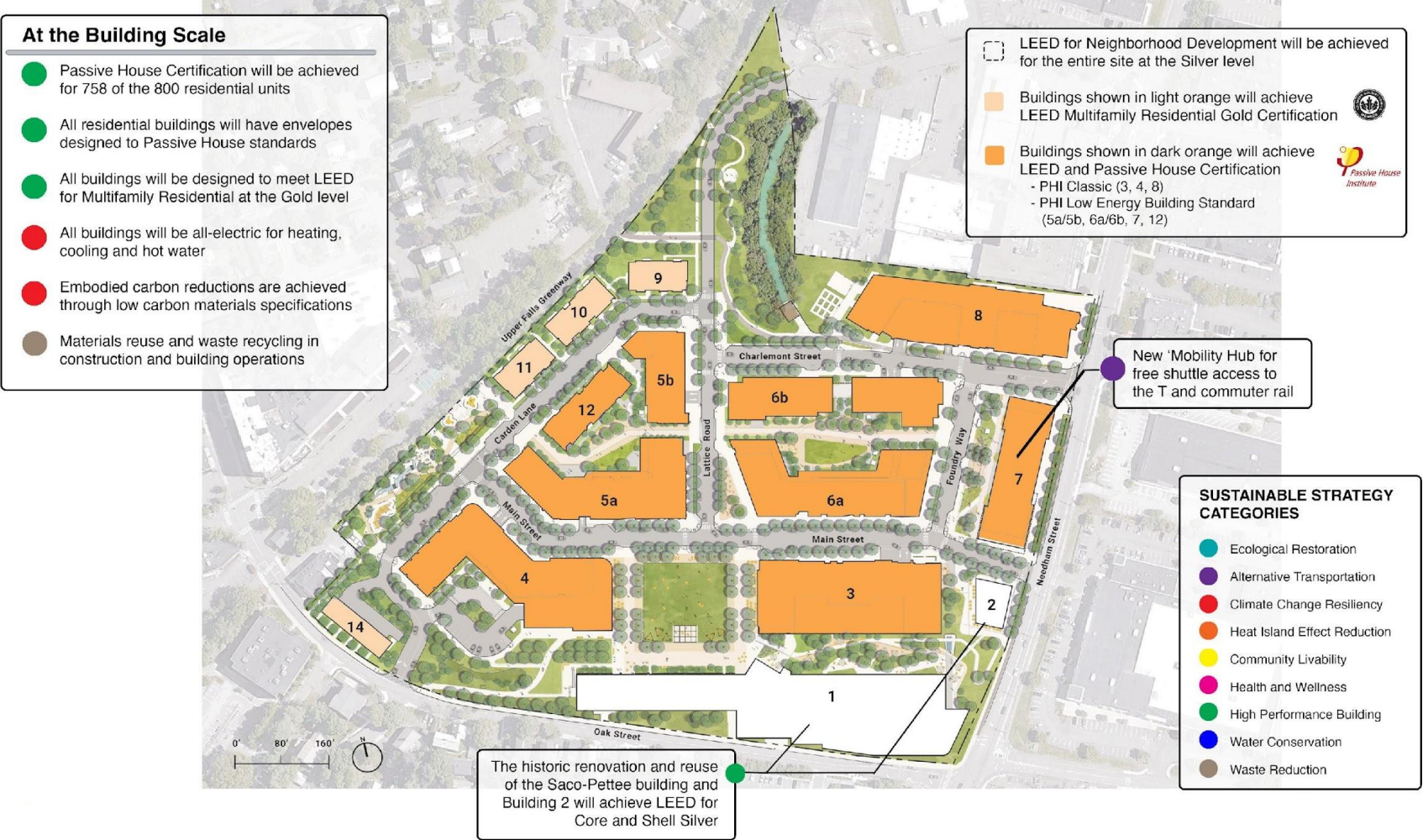
Sustainability Strategies

- Passive House
- LEED for Neighborhood Development
- LEED Core & Shell: B1 & B2
- LEED for Multifamily Residential
- Indoor airPLUS & Energy Star
- All-Electric HVAC & DHW
- Stormwater Best Management Practices
- Rainwater Harvesting
- Reduced Traffic Generation with TDM
- 140 Units of Affordable Housing
- 10 Acres of Open Space
- Solar Ready Roofs
- Sustainable/Green Roofs
- Low Embodied Carbon Building Materials and Operations



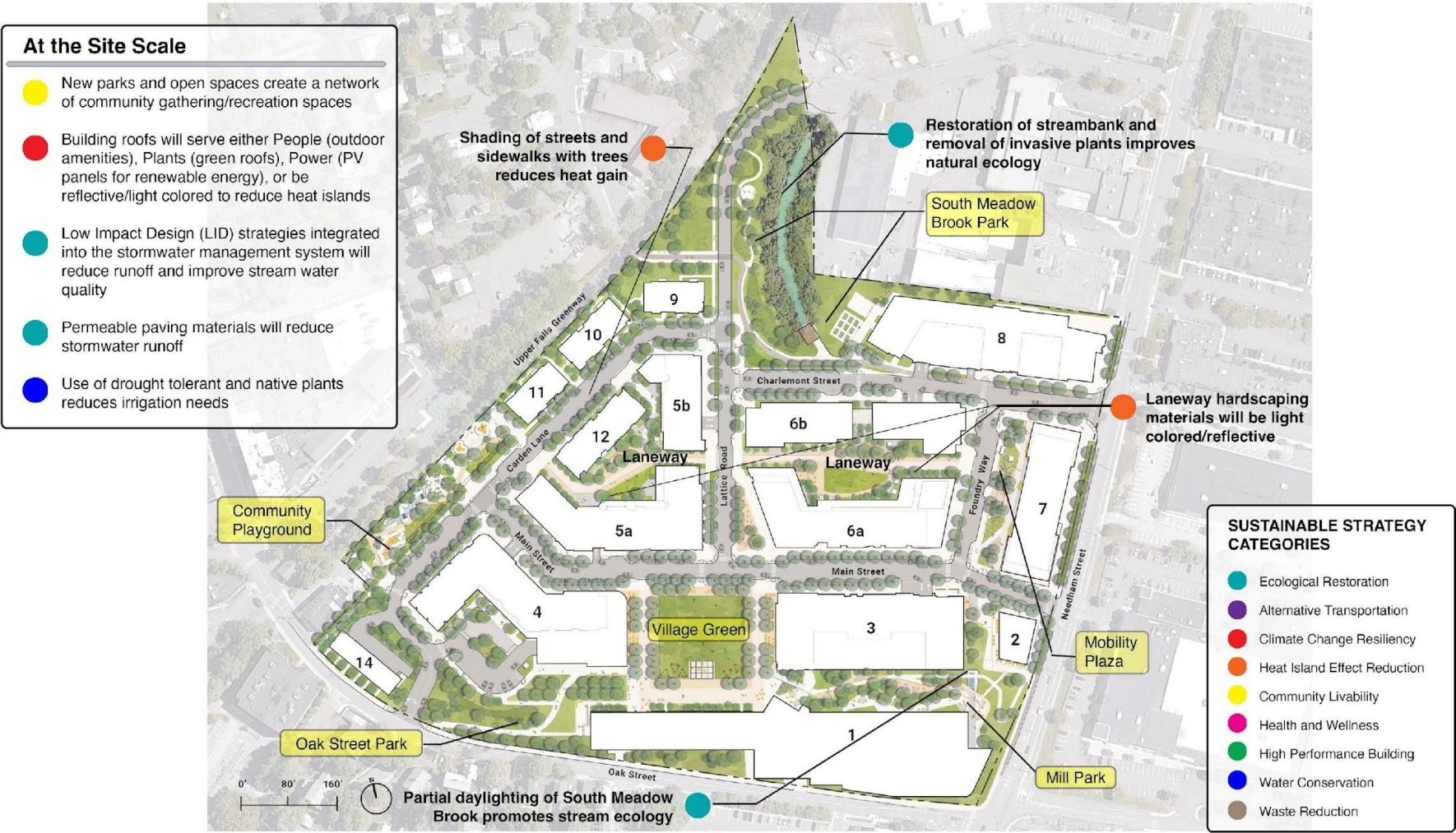
Northland Newton Development

Sustainability - Building



Northland Newton Development

Sustainability - Site



Northland Newton Development Leasing Plan



Northland Newton Development

Village Green



Northland Newton Development

Building 6 Laneway



Northland Newton Development

Building 3

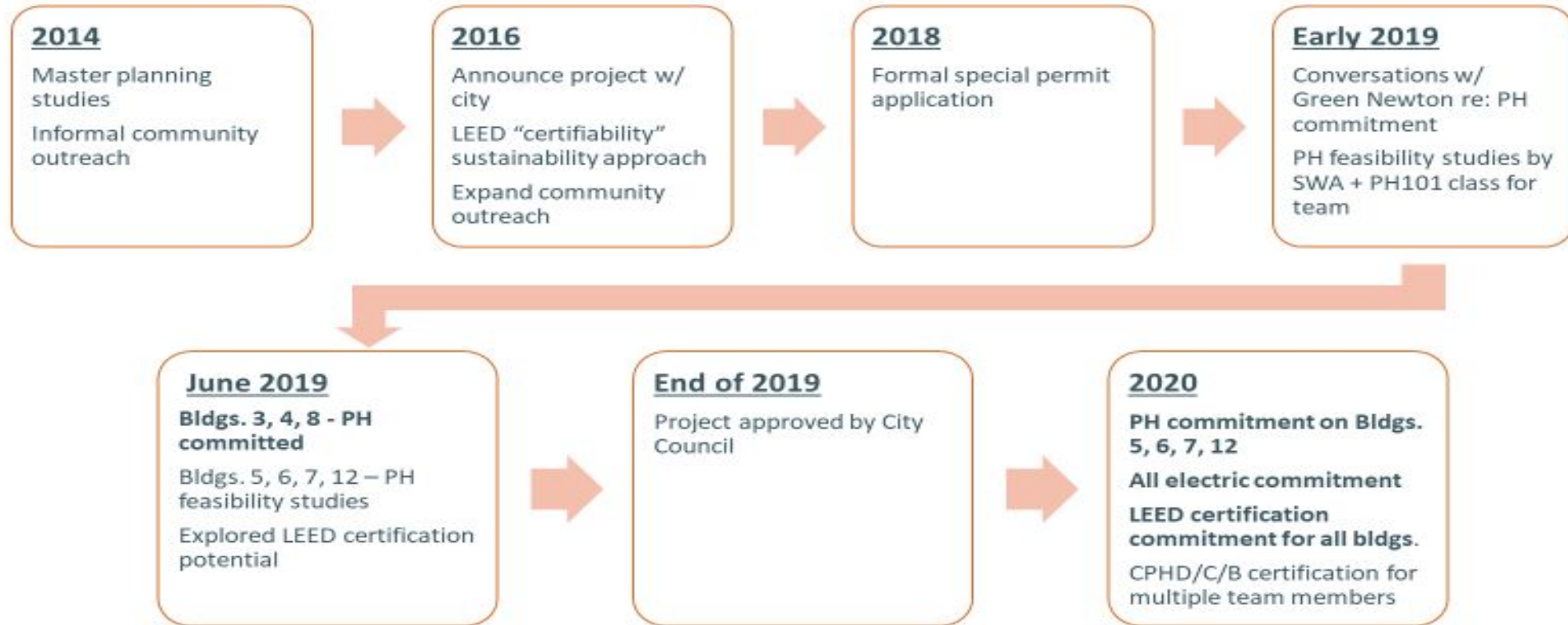


Northland Newton Development

Saco Pettee Mill Office Building – Exterior View



Northland Newton Development Timeline



Northland Newton Development Community Engagement



Northland Newton Development Community Referendum



The Proposed Northland Development on Needham Street

The facts

- 13 buildings, 4 of them **8 stories and 96' high**
- **822** rental apartments
- Nearly 2,000,000 square feet of total development
- Requires city council approval for zoning change and special permits

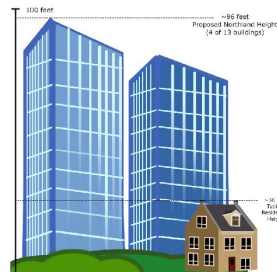


The concerns

- Overcrowded classrooms
- Even worse traffic
- Scale inappropriate for Newton
- Environmental impact

Who we are

Your neighbors along Carl and Charlemont streets who are concerned about the size and scale of this development



We need your help to keep this nightmare from becoming our reality!

PLEASE JOIN US

website: rightsizenewton.org | twitter: @rightsizenewton
email: rightsizenewton@gmail.com | phone: (781) 514-5094



Northland Newton Development Community Referendum



Northland Newton Development Community Referendum



YES 
for
NEWTON'S FUTURE

**TURNING AN AGING
INDUSTRIAL SITE
INTO A VIBRANT
COMMUNITY**



Vote YES on TUESDAY
to stand up for **housing,**
open space and **sustainability.**

**(Make sure you receive
both ballots!)**



BREAKING:
NEWTON VOTES



"Thank you to the thousands of Newton residents who voted in favor of bringing affordable housing, new open space, sustainable design, and smart growth to our city. The Northland Newton project is a huge win both for current residents and for future neighbors who will now have the opportunity to join our community. We are grateful to the hundreds of volunteers who worked tirelessly to inform voters, and to the civic organizations and city leaders who supported and shaped the Northland project over the past several years. We look forward to seeing the Northland project and all of its benefits come to fruition."

— Allison Sharma, chair of Yes for Newton's Future

Northland Newton Development

Team



Urban Design
& Architecture



Master Planning
& Architecture



Architecture



Construction
Manager



Universal Design
Consultant



Building Codes



Structural
Engineering



Civil Engineering



MEP Engineering
LEED



Geotech Engineering



Engineering of Structures
and Building Enclosures



Leasing



Branding
Wayfinding
Retail Design



Sustainability
& Wellness



Passive House
LEED
Building Envelope



Parking
Consultant



Landscape Architecture



Utility & Infrastructure



Deb Crossley
Zoning and Planning Chair, City Councilor, City of Newton

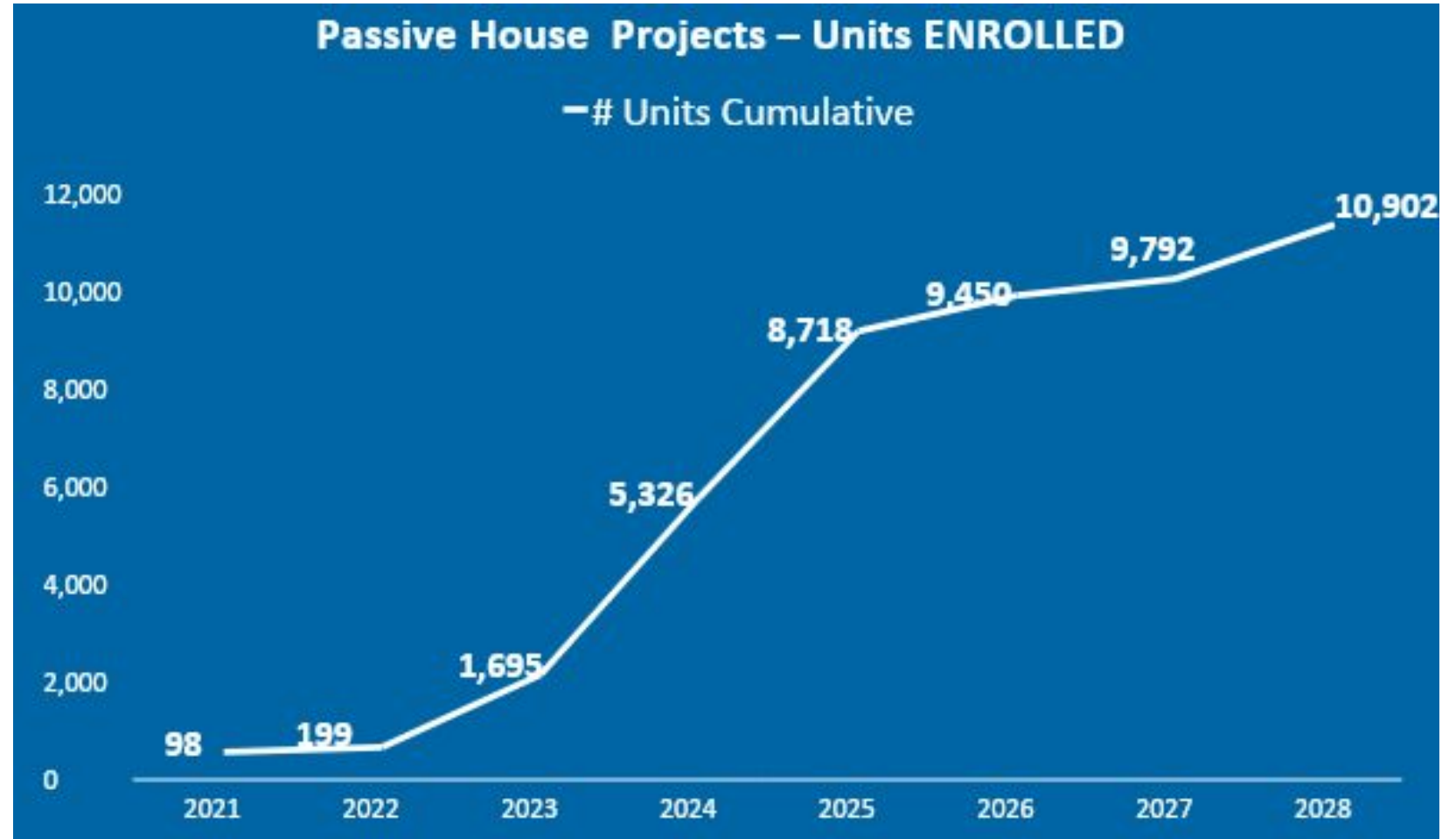


Multifamily Passive House Incentives: Massachusetts Momentum



PH incentive enrollment:

- 198 Buildings
- Over 13,000 Units



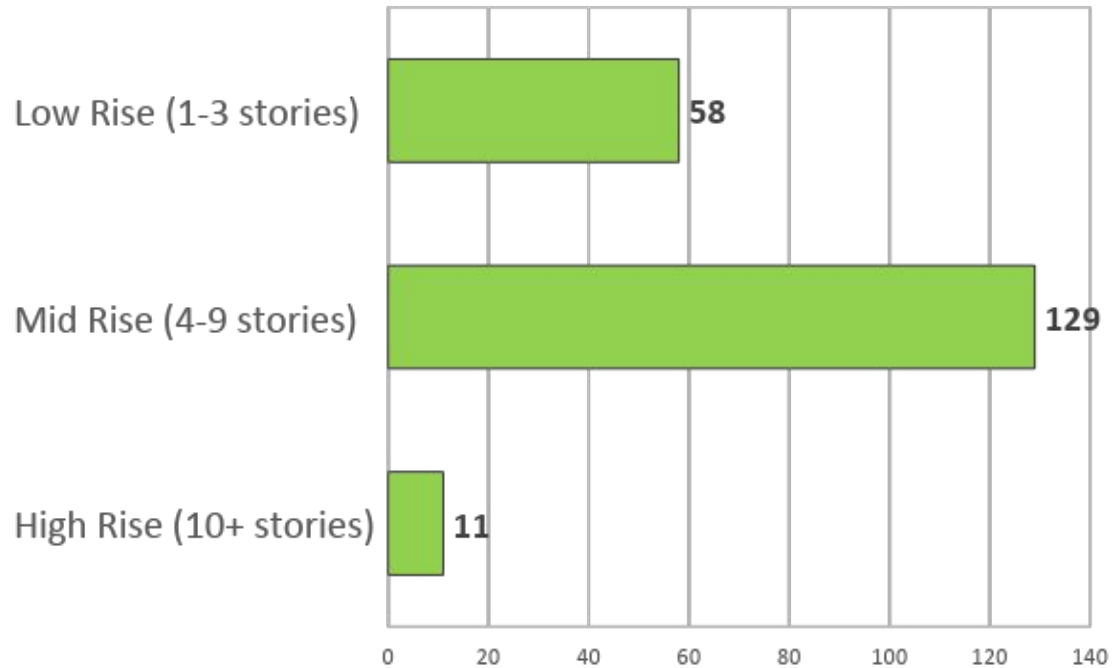
WE ARE MASS SAVE®:



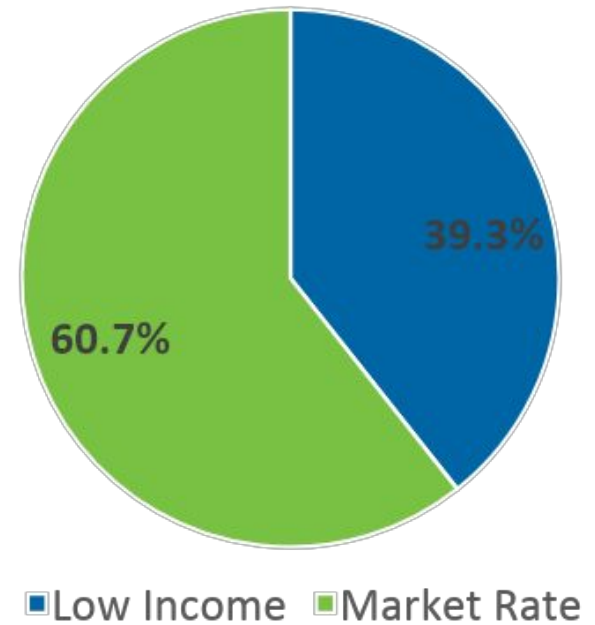
Multifamily Passive House Incentives: Massachusetts Momentum



Passive House Buildings - # Stories



Passive House Units



WE ARE MASS SAVE®:





Passive House Design Challenge

- \$4,000 per unit incentive
- 8 Affordable Projects: 540 Units



Incremental Cost for 7 Affordable Projects to upgrade to Passive House*

*Holbrook, Mattapan and Kenzi are not complete, so change orders may increase incremental cost slightly



Design Challenge: Incremental Cost Findings

- Average incremental cost: 2.4%
- Typical capital cost increases:
 - Ventilation upgrades to supply fresh air to living and bedrooms
 - Window & door upgrades
 - Thermal bridging breaks and air sealing
 - Additional testing and verification
- Typical capital cost savings:
 - Significantly reduced heating and cooling equipment because lower capacity needed
- Best practices for reducing incremental cost:
 - Experience and training for design and construction team
 - Simple massing and roofs





Passive House Multifamily Incentives

- Feasibility study cost up to \$5,000
- 75% of PH modeling cost up to \$20,000
- **\$3,000 per unit for PH certification**



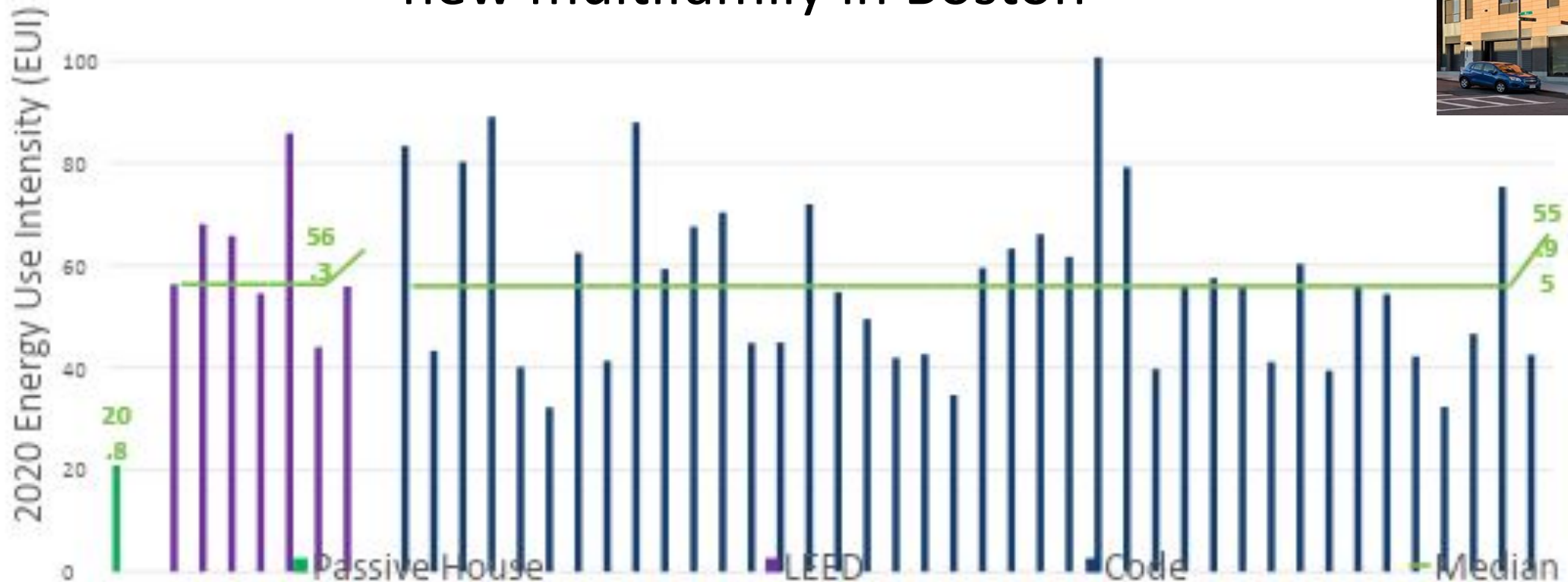
LESSONS

- Architects and teams with more PH training and experience had lower cost & better outcomes
- Decide early if you are seeking PH certification
- There is a large learning curve on first PH project – expect it
- Give yourself plenty of room in PH model for things to go wrong



Performance: Distillery, Boston 2020

PH Uses **63% less** energy per sq. ft. than median new multifamily in Boston



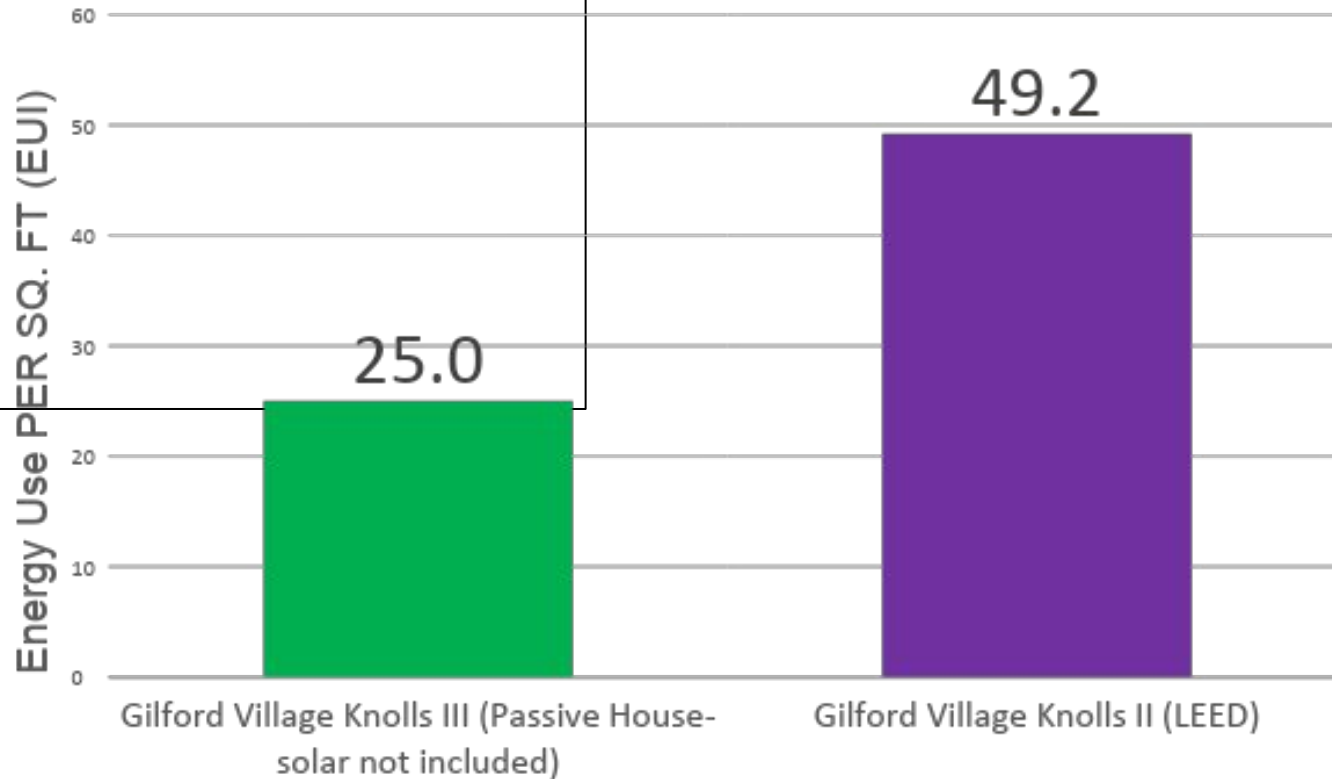
PH Performance: Philadelphia 2019 Affordable

57% less energy per sq. ft. than Median Code Built



PH Performance: Gilford Village Knowles II, NH

PH uses 49% less energy per sq. ft. than Gilford Village Knowles II LEED built 2008
(same building, different standard)





Results:

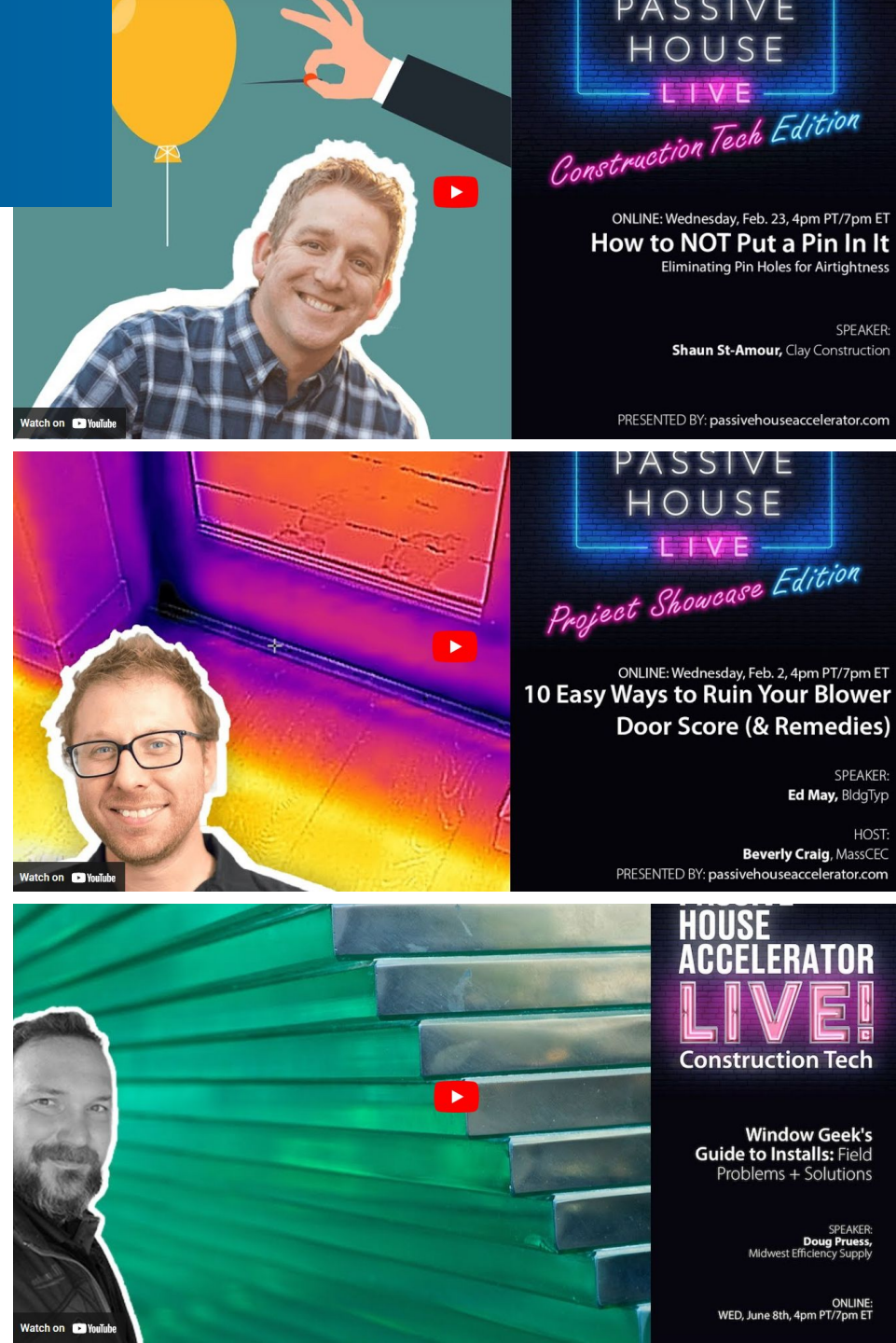
- Passive House multifamily new construction can be built today in MA with very low incremental cost and significant owner and occupant health and energy benefits

Educational Resources

Passive House Massachusetts (PHMA)

- SWA Construction Workshops
 - ✓ Carpenters, Window Installers, Air Barrier, Insulation Trades
 - ✓ HVAC & Plumbing Trades
 - ✓ QA/QC for Ensuring Success
- Cost Estimating for Passive House
- An Introduction to Multifamily Passive House
- What to Expect When You are Expecting A Passive House

Passive House Accelerator Video Library



Q&A

Thank You

Look out for additional information on
upcoming GRCx Programs

Tues, Nov. 7th (1:00-2:30pm): Campus as Lab (CaL) –
Best Practices to Increase the Climate Action Impact of Higher
Education Institutions

Tues, Dec. 5th (2:00-3:30pm): Our Shared History Report