

BUILDINGENERGY BOSTON

Blighted Site to Thriving Community: High-Performance Buildings for a Healthy Neighborhood

Bill Boehm, Boehm Architects

Spencer Buchholz, Lawrence Community Works

Paul Eddowes, New Ecology

Corey Heaslip, Delphi Construction

Chris Thompson, Delphi Construction

Curated by Alex Guerrieri and Carmen Torres

Northeast Sustainable Energy Association (NESEA) | March 20, 2025

BLIGHTED SITE TO THRIVING COMMUNITY

High-performance Buildings
For A
Healthy Neighborhood



**COREY
HEASLIP**
VP of Project
Development



**CHRIS
THOMPSON**
Director of
Preconstruction



**BILL
BOEHM**
Principal



**PAUL
EDDOWES**
Director of Green
Building Services



**SPENCER
BUCHHOLZ**
Project Manager



LOCAL CHALLENGES & OPPORTUNITIES
Who We Are

Founded
1986

Built/Renovated Units
300+

Membership Base
5,000+

Community Investment
\$175M+



LOCAL CHALLENGES & OPPORTUNITIES

Who We Are



Lawrence CommunityWorks, Inc. (LCW) is a community development corporation that weaves together community planning, organizing, and asset-building efforts with high-quality affordable housing and commercial development to create vibrant neighborhoods and empowered residents.

By facilitating conversations and action on community priorities, LCW engages partners and a network of youth and adult residents in opportunities to move themselves and the city of Lawrence forward.

Once a thriving textile hub, now one of the poorest cities in MA

\$27,827 per capita income

Households

36% extremely low income

Low housing ownership

29%

Income & Poverty

18% residents live below poverty line

LOCAL CHALLENGES & OPPORTUNITIES

Creating a New Neighborhood

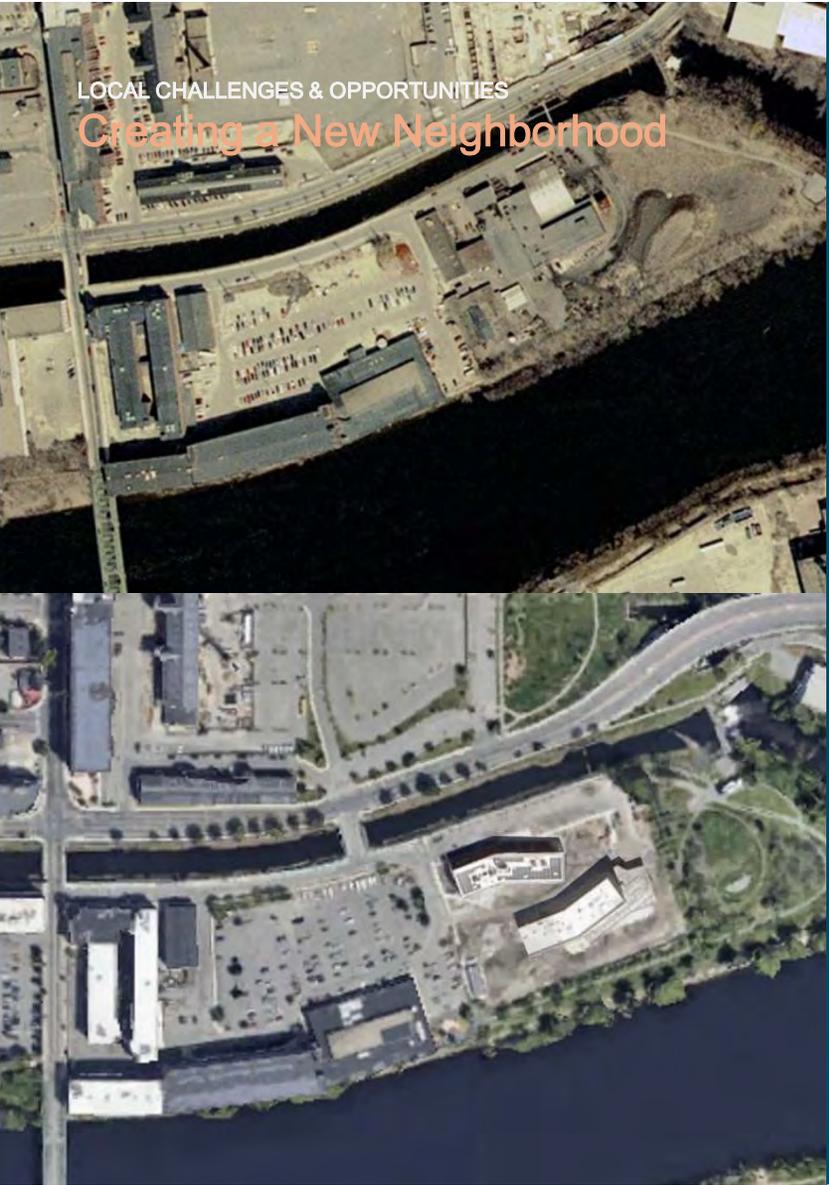
Initially Island Parkside Project, renamed after a founding board member:
Armand Michael Hyatt Apartments

Located in Lawrence's Mill District

Result of Reviviendo – “*rebirth*” in Spanish – Gateway Overlay (RGO), a 20+ year mission to build a new neighborhood

RGO introduced the possibility of mixed-use developments within the Mill District



An aerial photograph showing an industrial area with several large buildings and parking lots. A river flows through the center, and a bridge crosses it. The text 'LOCAL CHALLENGES & OPPORTUNITIES' is overlaid in the top left corner.

LOCAL CHALLENGES & OPPORTUNITIES

Creating a New Neighborhood

COMPLETION OF THE UNION CROSSING PROJECT

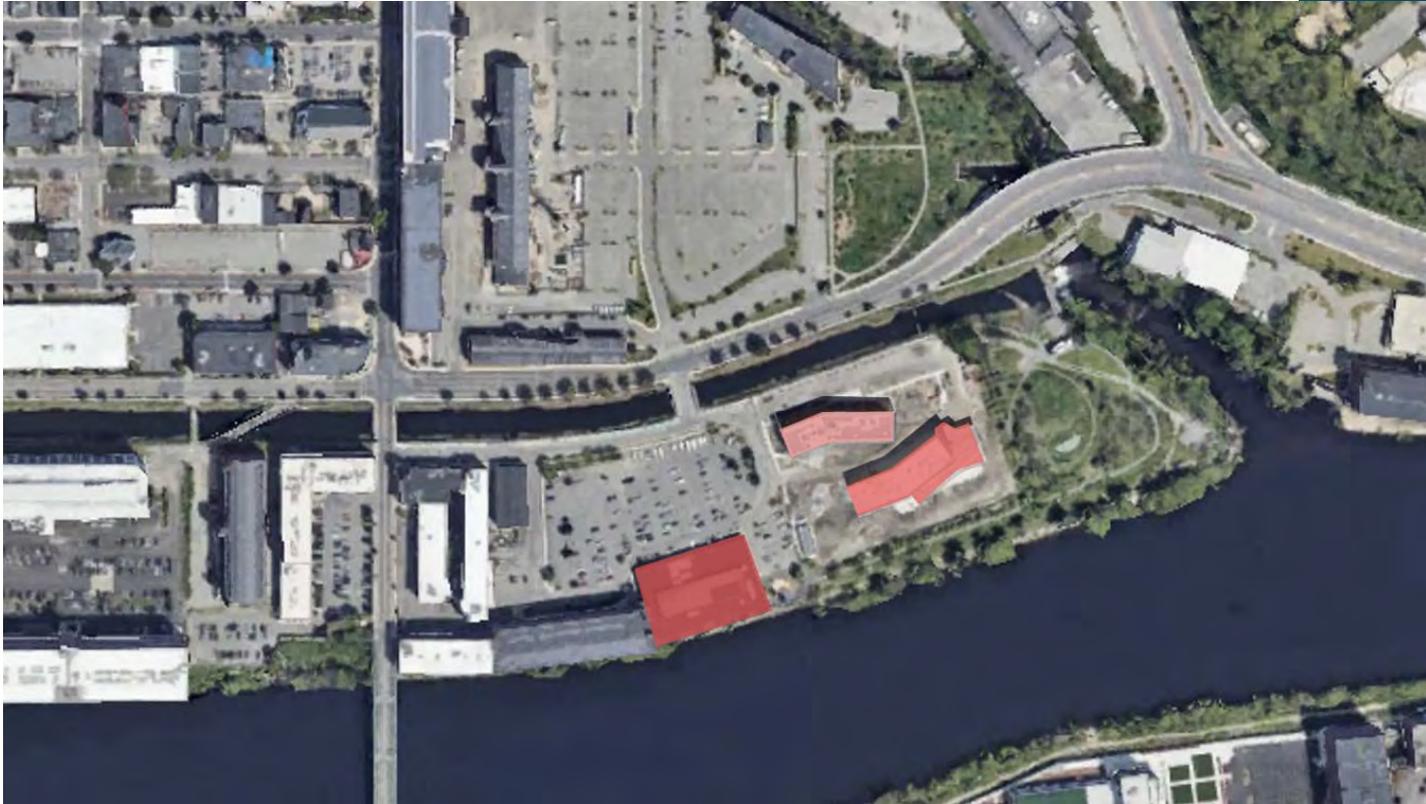
- Repurposing of 2 mill buildings into 133 units
- 100% affordable housing
- 46,000 SF of commercial space
- Houses area non-profits and businesses including 26 creative/artist studios

A CONTINUATION WORK

- Includes 2 phases in 2 buildings
- Total of 80 units
- 100% affordable housing targeting families
- 18,000 SF youth community center

LOCAL CHALLENGES & OPPORTUNITIES

Creating a New Neighborhood



LOCAL CHALLENGES & OPPORTUNITIES

Creating a New Neighborhood



LOCAL CHALLENGES & OPPORTUNITIES

Creating a New Neighborhood

DYEWORKS

The final piece will be the redevelopment of a 35,000 SF textile dying facility. It will home Lawrence CommunityWorks' youth program, Movement City, a clinic run by the Greater Lawrence Family Health Center, and a local Latino owned grocery store



LOCAL CHALLENGES & OPPORTUNITIES

Why Phius?



Commitment to creating the most sustainable, resilient and healthy community possible.

Reducing the heat island as well as **providing neighborhood residents with a natural back yard** in an area where access to green space had been previously limited.

Recovering from Lawrence's 2018 natural gas explosions a strong desire to **reduce our reliance on dangerous fossil fuels.**



The project has added large amounts of **permeable and green spaces** as well as greatly increasing the **tree canopy** in an area that was previously more than 90% paved.

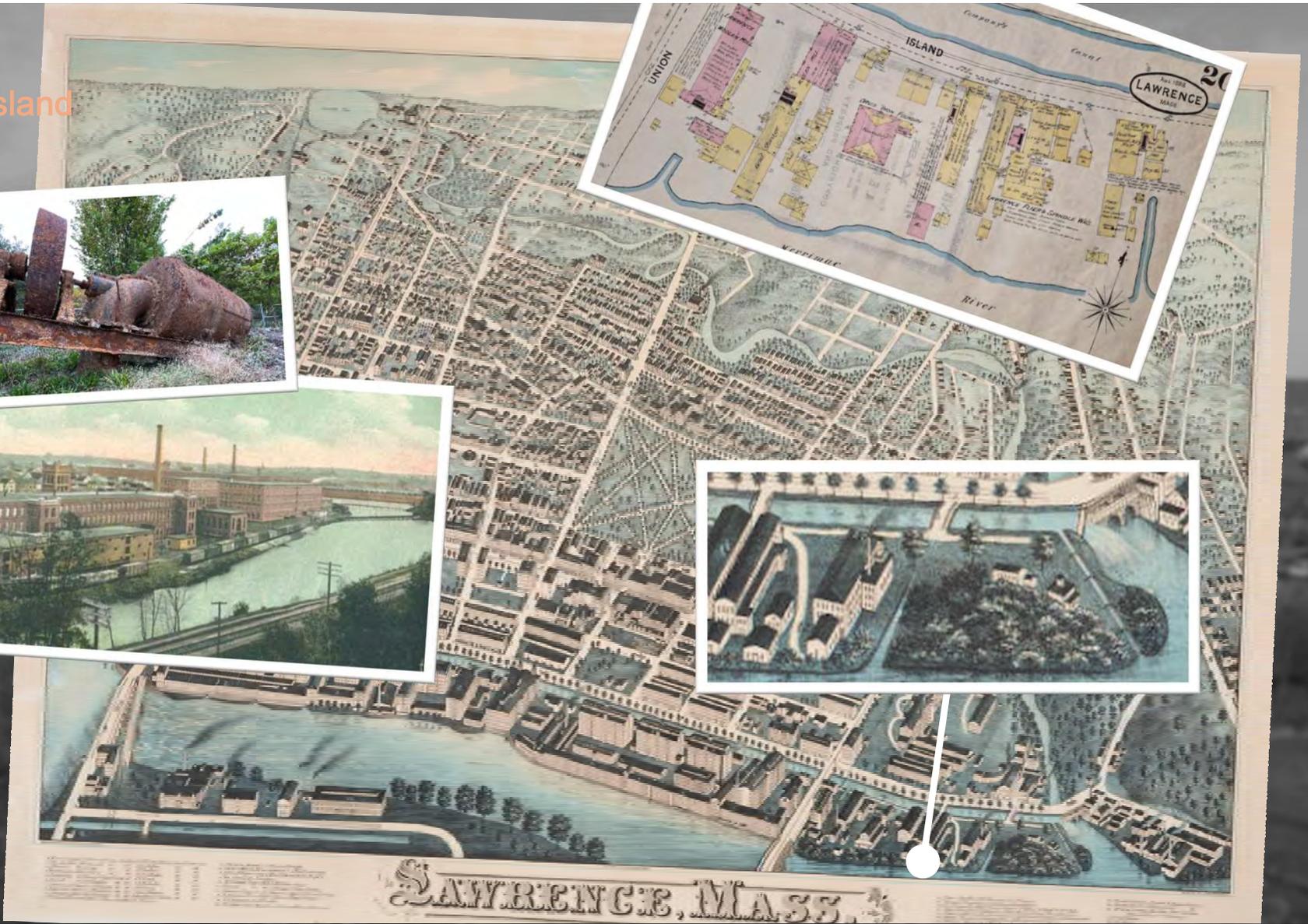
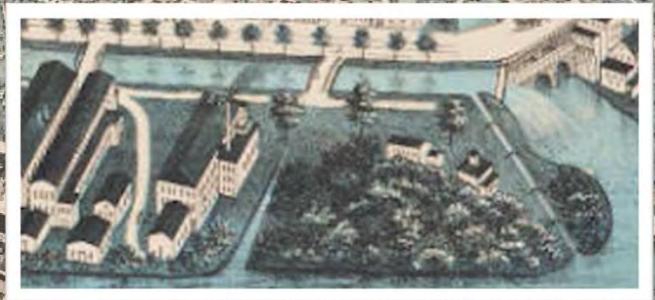
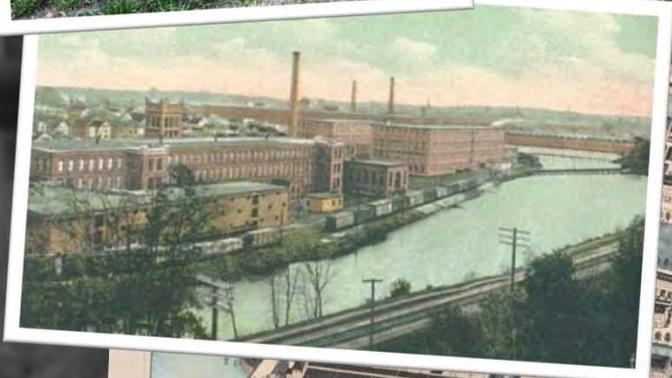
The site connects the residential and commercial development on its west side from a recently developed city park to the east. **It was designed to encourage a natural site integration into this park.** In a City with almost 100,000 residents in 6 square miles this is an important amenity.



Project team explored many options from LEED to Fitwell.

Ultimately landing on PHIUS as the most practical that would address resident comfort, building efficiency and climate resiliency.

LAWRENCE
Historic Mill Island



LAWRENCE

Historic Mill Island

- Canal built in 1845
- Mills built to harness power
- Textile industry powerhouse through 1950



THE SITE

Post-industrial Wasteland

- 4.3 acre brownfield
- Adjacent mills mostly rehabbed
- East end transformed into park



DESIGN CONCEPT

Reinterpreting The Mill Block



- Collaborative design process
- Linearity and scale of adjacent mills
- Configured for public access

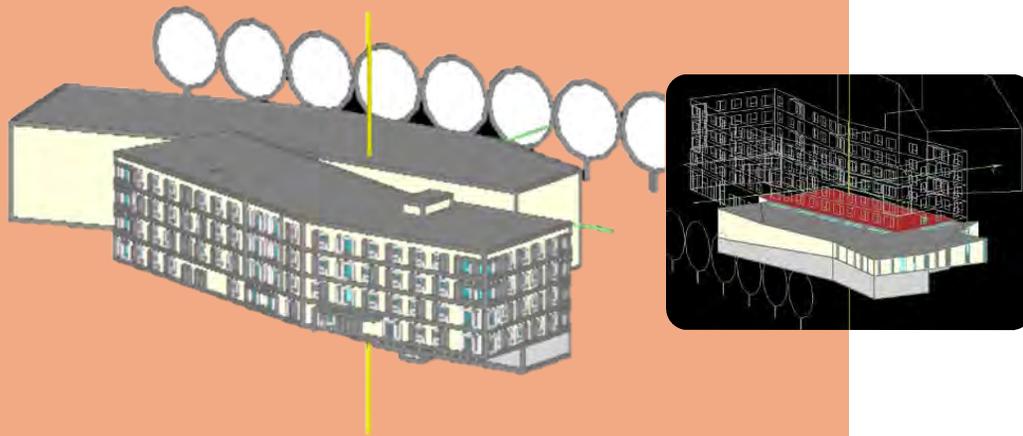
UP AND RUNNING!

Mill-Century Modern



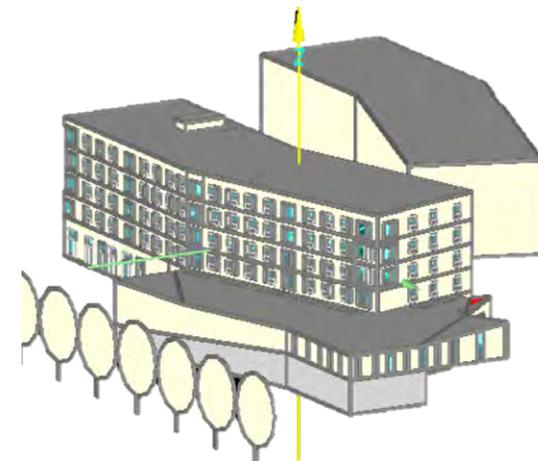
DESIGN SPECIFICS & CHALLENGES
Modeling

Phase 1



- Mostly slab on grade
- Small amount of podium construction all within Phius envelope
- Trash room excluded from Phius envelope

Phase 2



- Large podium component with Squash Busters sitting below the residential building
- Squash Busters as well as trash room excluded from Phius envelope

DESIGN SPECIFICS & CHALLENGES

Passive House Challenges and Collaboration

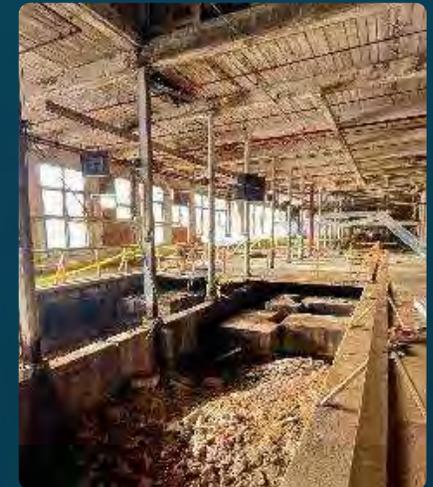
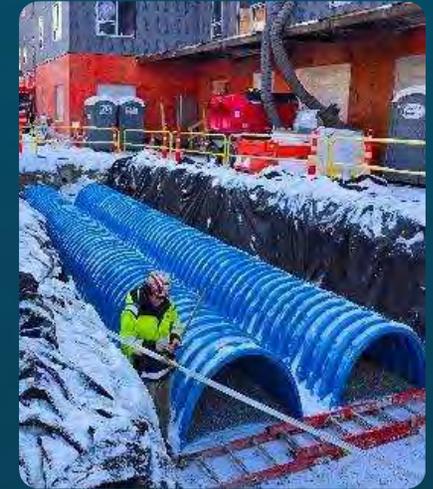
- ZIP R Panels – unknown to the team if they could be successfully utilized on a multifamily development.
- Electrification of centralized DHW – confidence in the technology not quite there during design, considered for Phase 2.
- Early collaboration with the GC – Having Delphi on board for pre con phase was very helpful in getting real time pricing feedback on Plius components.



DELPHI'S BACKGROUND

Passive Momentum

- **Passive House was new to us**
 - Some experience with Net Zero and EGC
 - Unsure of Phius requirements and binary result
- **Initial Introduction to LCW**
 - Bid Fee & Quals and awarded after interview
 - Worked to develop the GMP with LCW, Boehm, Abacus, and New Ecology to define scope and budget
- **Pricing comparisons to non-Phius projects**
 - Cost per unit
 - Cost for Squashbusters on Phase 2



Construction Breakdown

Rewind to 2021 with COVID

- Availability of materials
- Escalation clauses in contracts

1st Phius project for this field team

2nd Phius project for Delphi

Collaboration was key!



Construction Breakdown



MAR/2023



2023

JAN/2024

SEP/2024

NOV/2024

Lumber | Mar/22

+36.7%

Gypsum products | Mar/22

+20.8%

Concrete | Mar/22

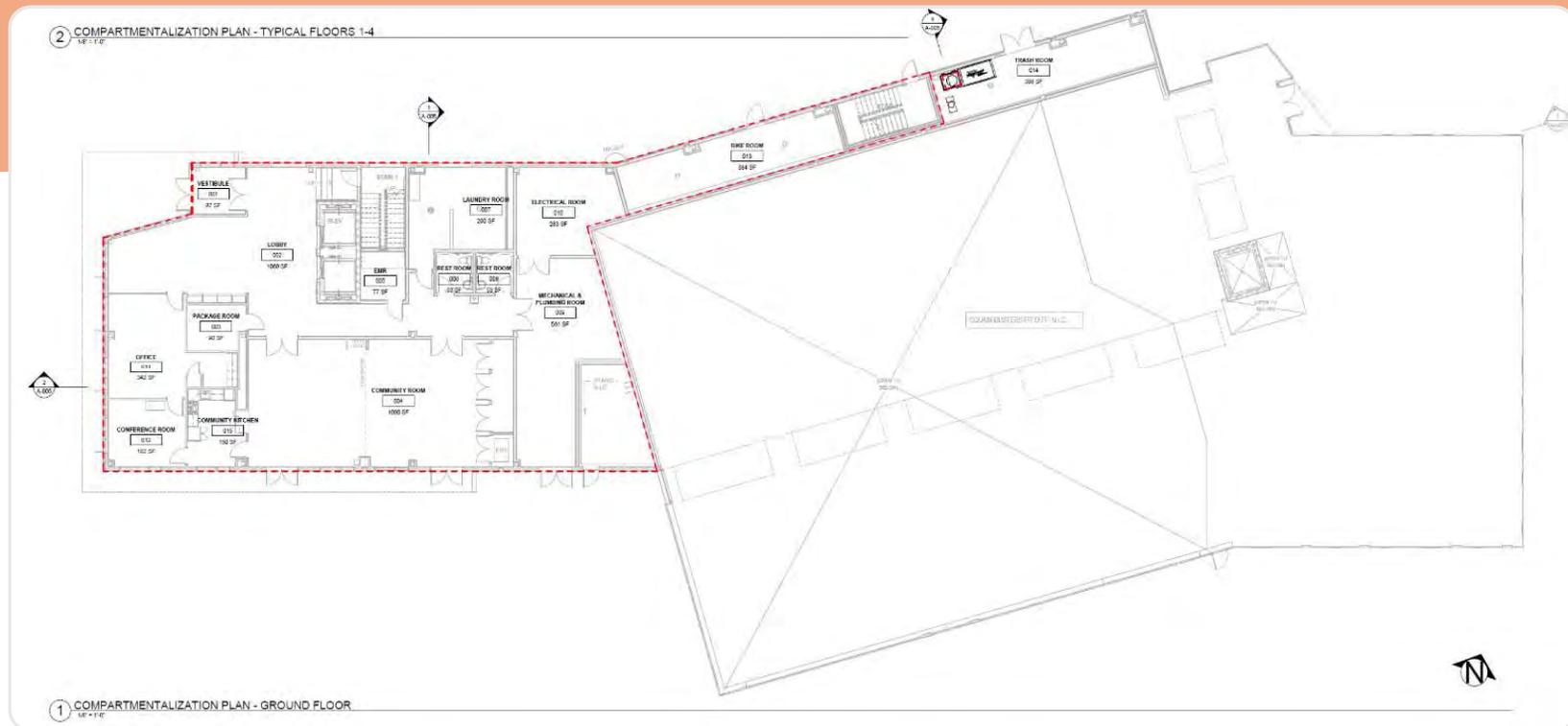
+9%

DATA SHOWS CUMULATIVE VARIATION OF THE 1ST QUARTER OF 2022

PHIUS VERIFICATION

Whole Building Air Leakage Testing

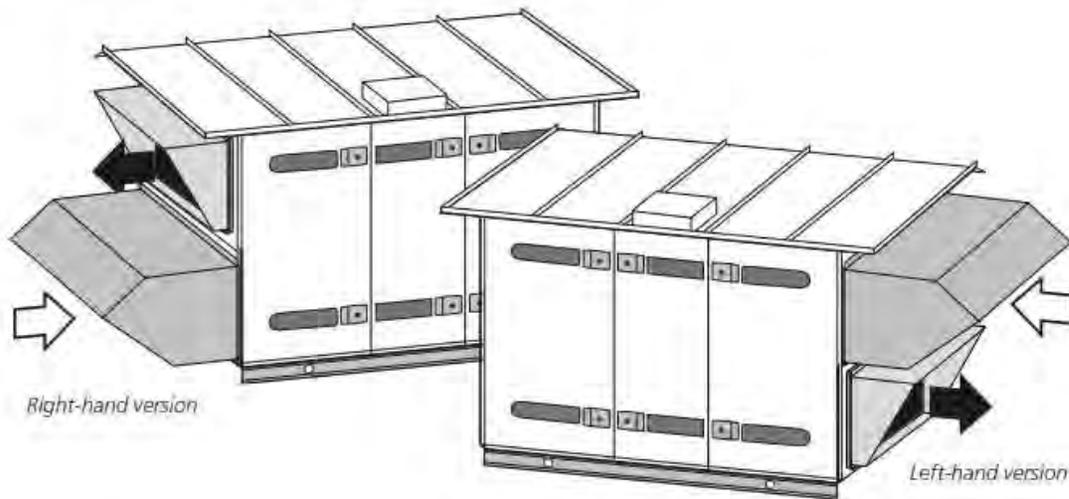
- Complications with podium construction and attached commercial space with phase 2
- Testing of whole building vs residential only.
- Occupancy schedule for commercial vs residential portions of building.



PHIUS VERIFICATION

Ventilation

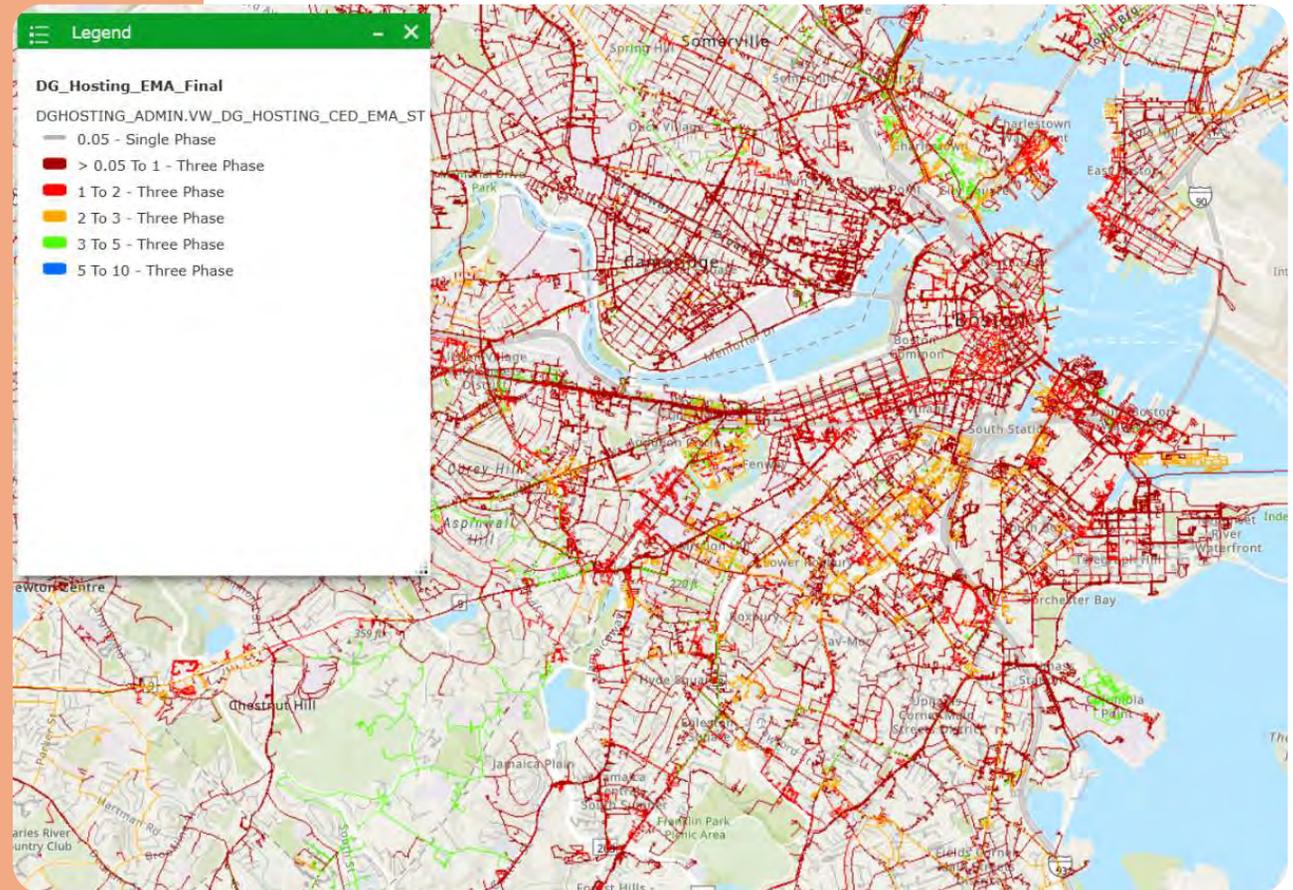
- Control board issues at both phases. Proper storage of equipment is important.
- Ventilation air has been difficult to balance.



PHIUS VERIFICATION

On Site Solar PV

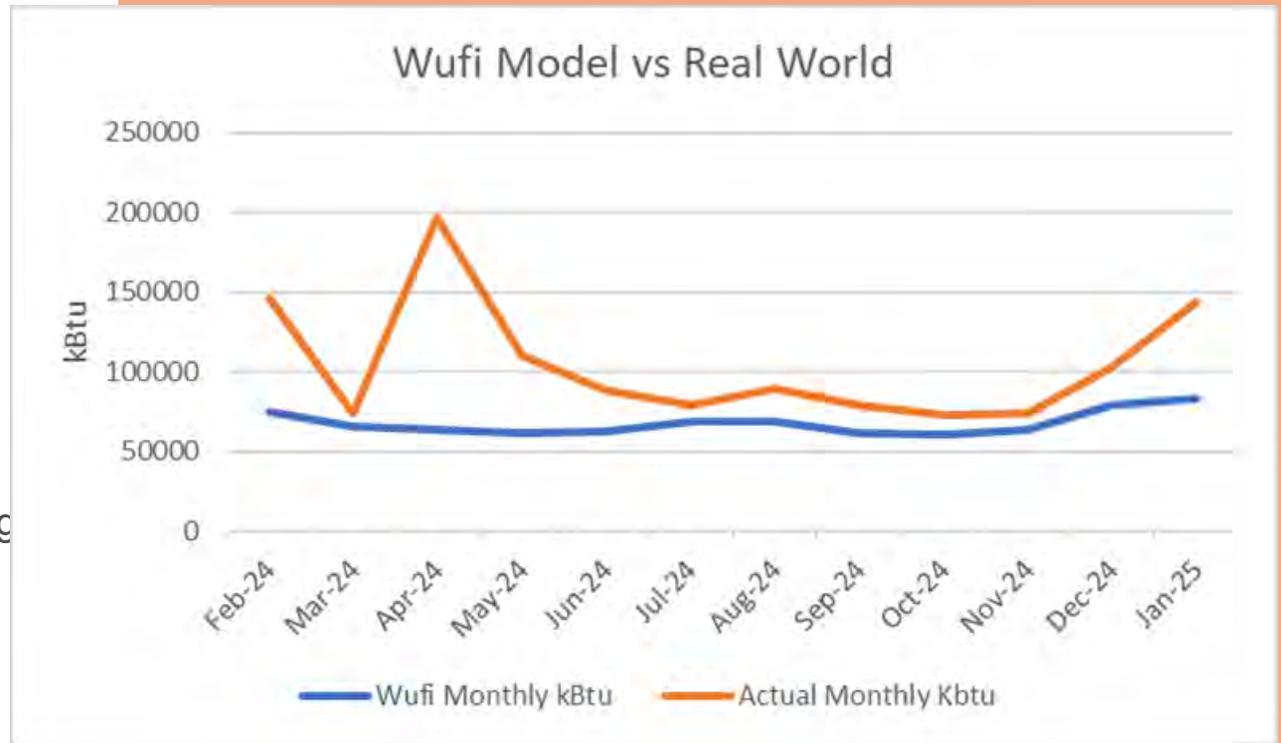
- Ungrounded feeder circuit preventing interconnection of solar PV
- Implications for certification since we will not meet source energy targets.
- Issue unique to this project, but grid connection issues are common.
- Option to pursue Phius+ 2018 which would allow the use of RECs to offset source energy.



PASSIVE HOUSE DATA

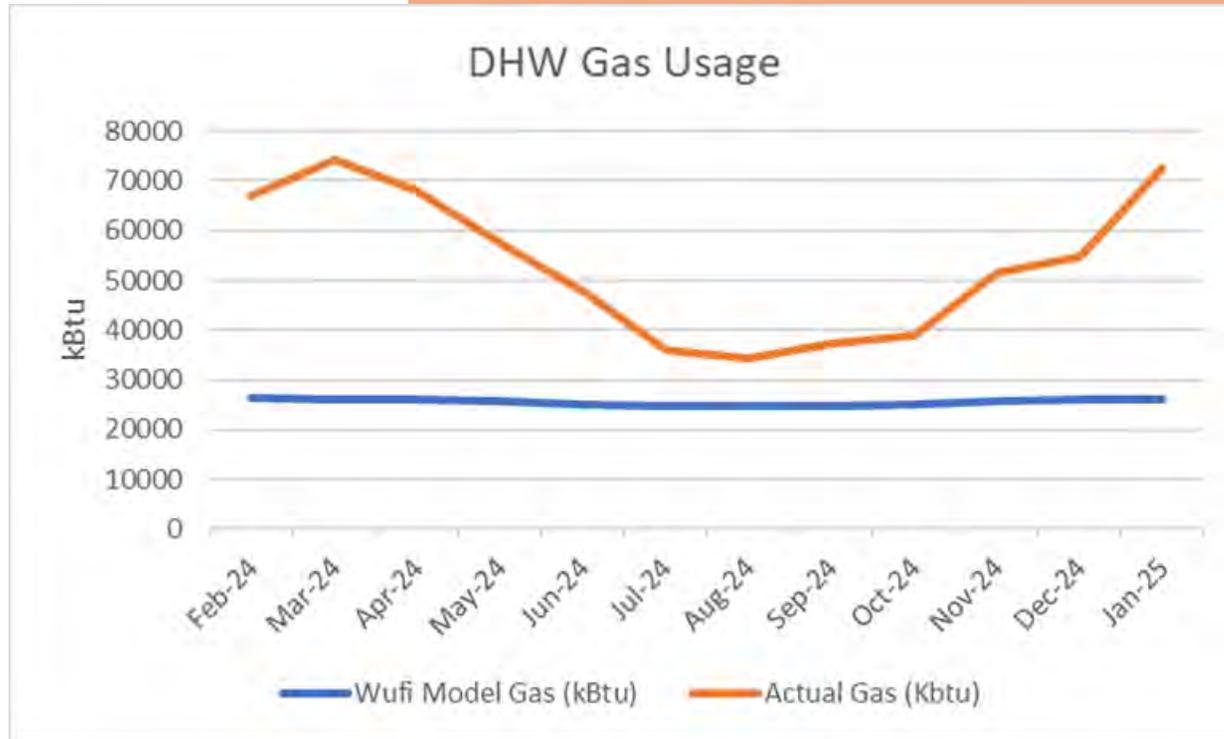
Performance VS Model

- Actual Site Energy Use Intensity - Excludes unit billing data 25.20 kBtu/sqft
- WUFI Site Energy Use Intensity - Excludes unit plug loads and lighting 17.20 kBtu/sqft



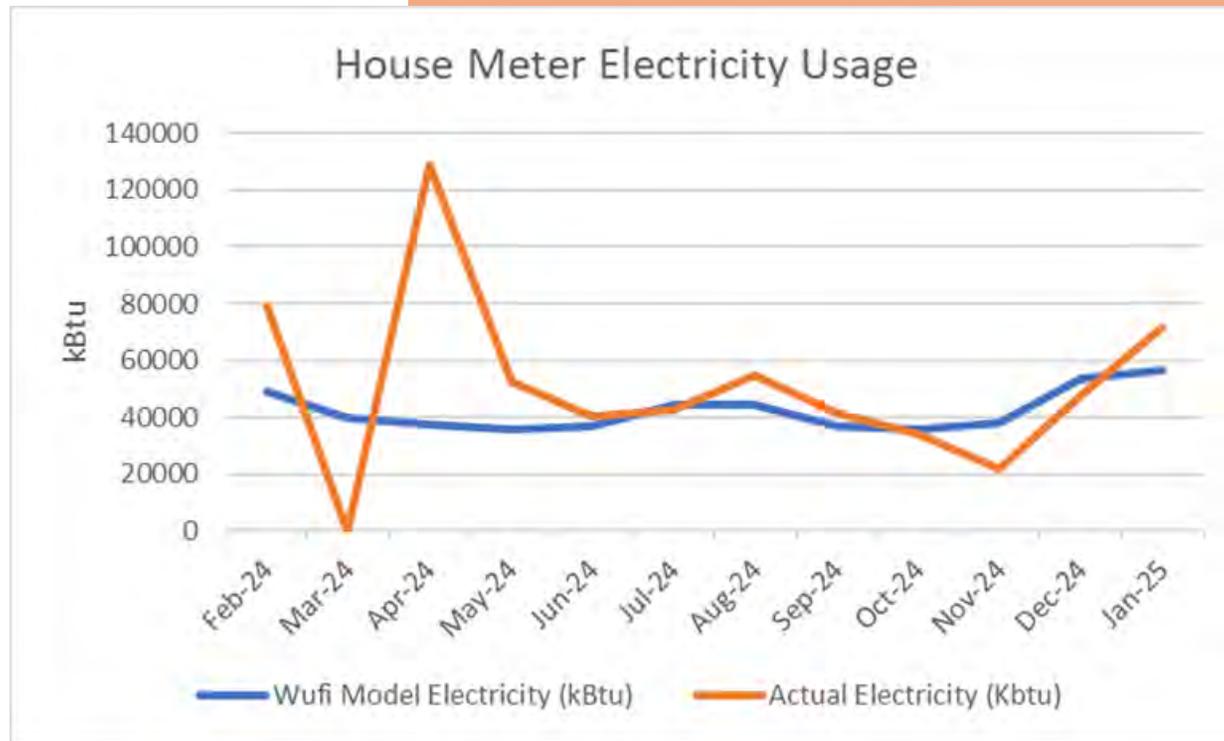
PASSIVE HOUSE DATA

Performance VS Model



PASSIVE HOUSE DATA

Performance VS Model



Working the Numbers

Phase 1

Total Development Costs = \$21,079,547

- Hard Costs = \$13,853,029
 - Contaminated Soils = \$270,702



FINANCE & INCENTIVES

Working the Numbers

Phase 1

Total Development Costs = \$21,079,547

- Hard Costs = \$13,853,029
 - Contaminated Soils = \$270,702

Phase 2

40 apts + Squashbusters

Total Development Costs = \$32,709,553

- Hard Costs = \$25,399,645
 - Contaminated Soils = \$1,666,614



FINANCE & INCENTIVES

Winning Strategies – Ask everyone!

Multiple Financing Sources

- Low Income Housing Tax Credits
- State, Federal and Local Affordable Housing Subsidies
- Capital Campaigns – DyeWork and Squashbusters – Private donations
- Quasi-state agency financing
- Bank Financing
- MASSWORKS Infrastructure Grant.
- Brownfields Grants – Contaminated Soils
- Congressionally Directed Earmark Funds



TRANSFORMATION

A New Neighborhood Awakening

Phase 1

Fully Occupied as of November 2023

Phase 2

Fully Occupied as of December 2024

Squashbusters

Occupied and programming began
December 2024

DyeWorks

Construction began October 2024 with
anticipated completion spring of 2026

Playground and open space amenities are
currently being planned with area residents
and anticipated to be completed by the fall
of 2025.

