

NYS Climate Leadership and Community Protection Act (CLCPA)

New York's Nation-Leading Climate Targets

85% Reduction in GHG Emissions by 2050

100% Zero-emission Electricity by 2040

70% Renewable Energy by 2030

9,000 MW of Offshore Wind by 2035

3,000 MW of Energy Storage by 2030

6,000 MW of Solar by 2025

22 Million Tons of Carbon Reduction through Energy Efficiency and Electrification

NEW YORK'S CLIMATE LEADERSHIP and COMMUNITY PROTECTION ACT



New York's landmark new law, the Climate Leadership and Community Protection Act (Climate Act), is demonstrating to the nation how to confront the greatest threat facing life as we know it — a rapidly changing climate. Signed into law in July 2019, the Climate Act will empower every New Yorker to fight climate change and provide the opportunity to improve all our daily lives.

This is our planet. This is our time to fight for it.

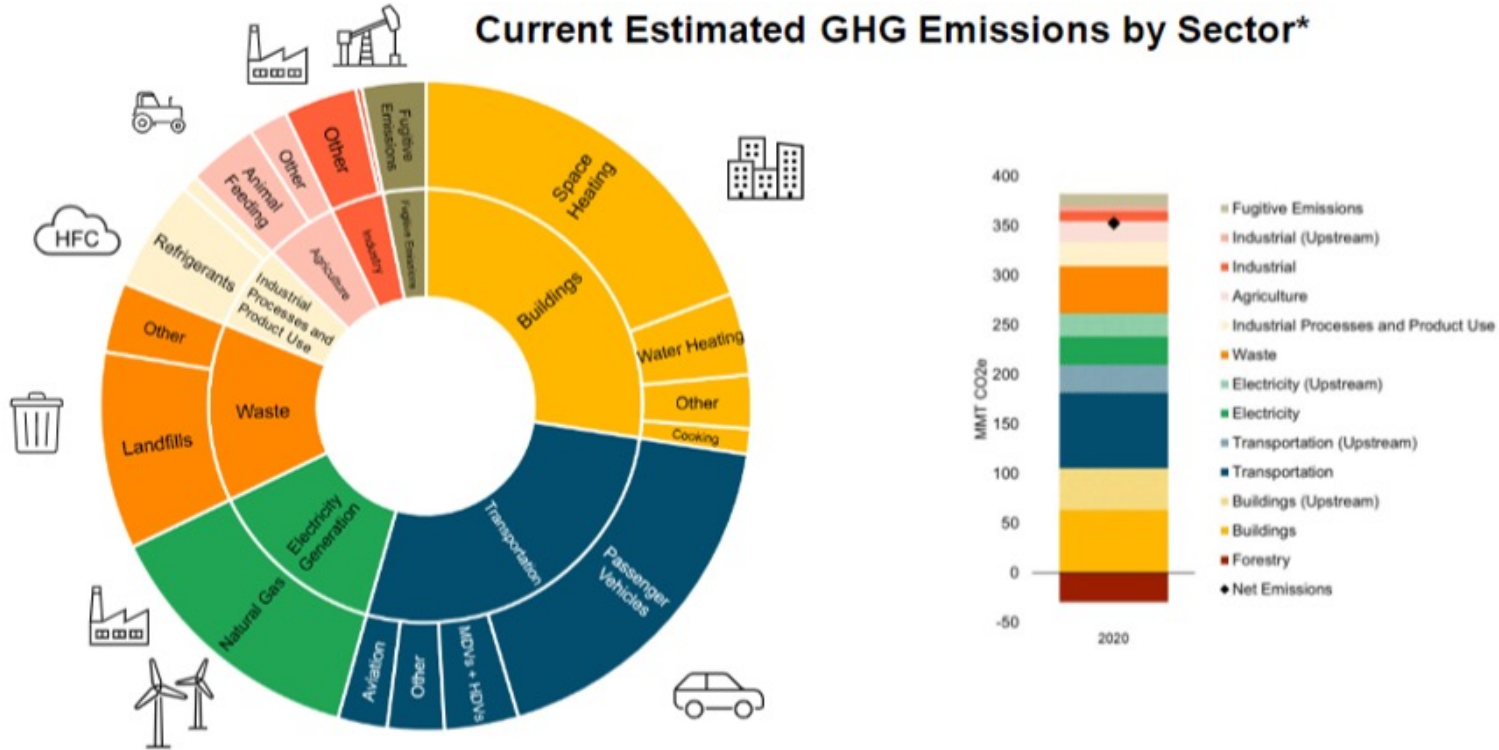
By 2040: achieve 100% zero-emission electricity | By 2050: reduce emissions at least 85% below 1990 levels

Achieving the ambitious goals of this law will mean transforming the way we generate and use electricity, the way we heat our homes, and the way we get to school and work. New Yorkers will tackle climate change and create new opportunities for our children and grandchildren. Through thoughtful planning, this effort will breathe life into our economy with well-paying clean energy jobs, new industries and business opportunities, and improved health and quality of life for New York families and communities. New York's course on climate action also means spending less on fossil fuels and keeping our energy dollars in the local economy, and in the pockets of hardworking New Yorkers.



**Homes and
Community Renewal**

Climate Leadership and Community Protection Act (CLCPA)



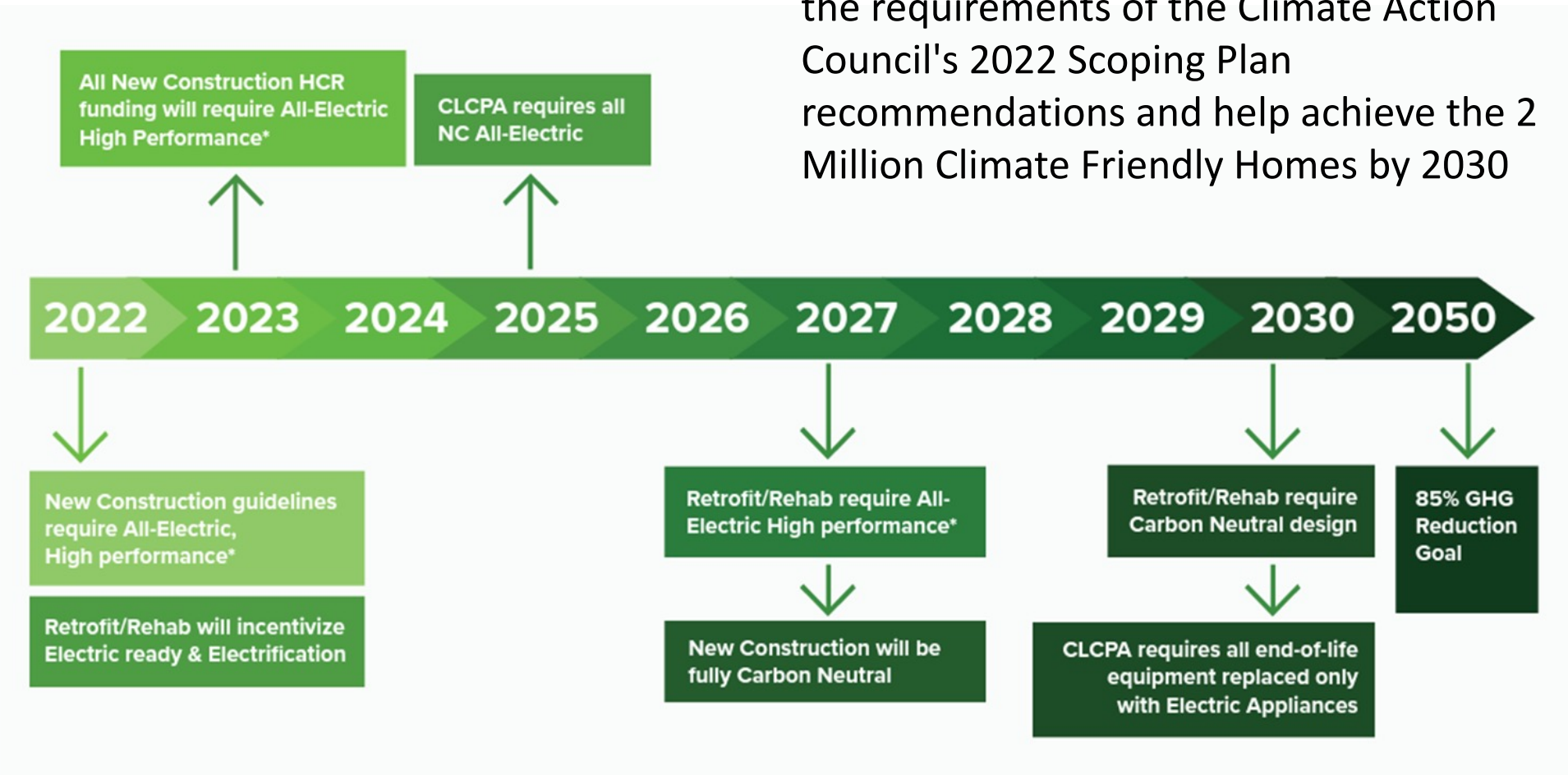
*Draft 2020 results in line with DEC CLCPA accounting including upstream emission factors, 20-year GWP, and estimates from NY PATHWAYS



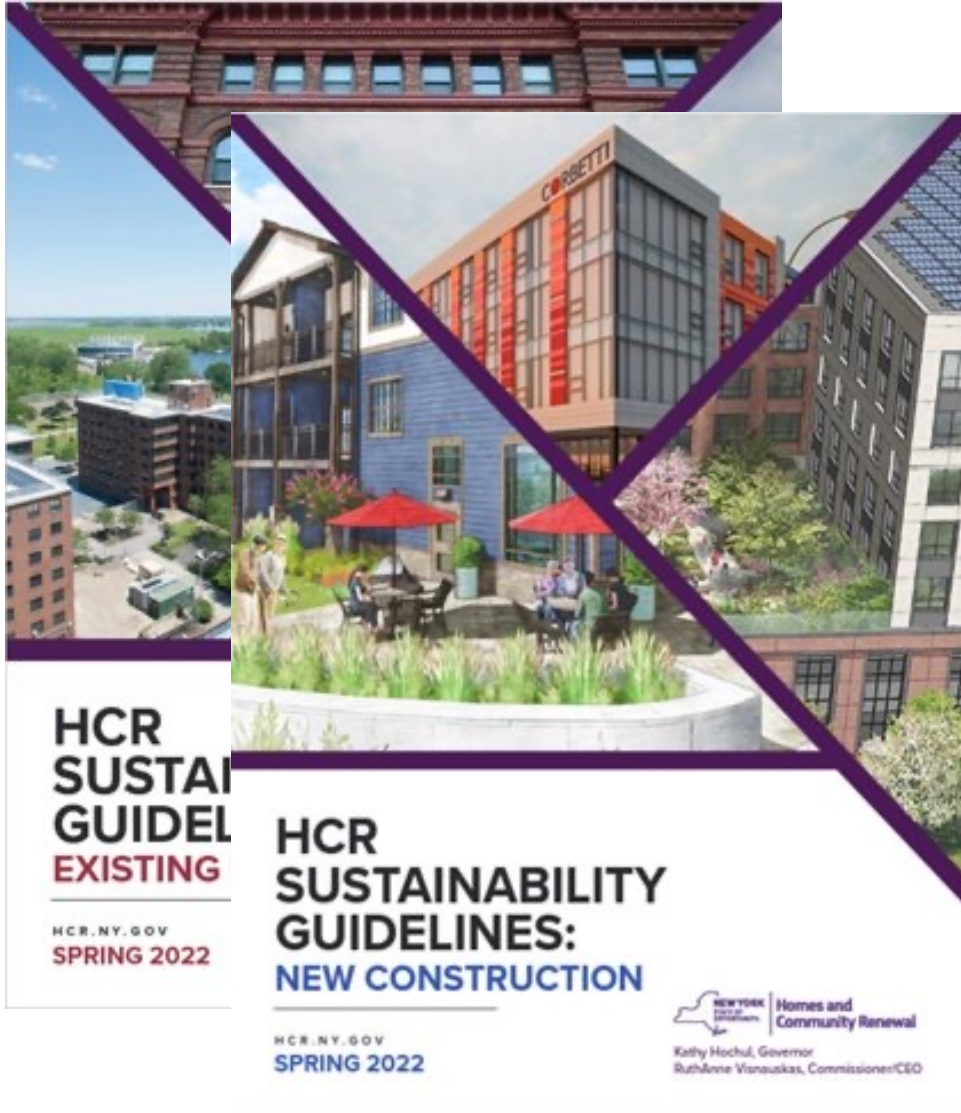
HCR Sustainability Goals

Housing Alignment CLCPA

Ensure HCR's housing standards meet the requirements of the Climate Action Council's 2022 Scoping Plan recommendations and help achieve the 2 Million Climate Friendly Homes by 2030



Sustainability Unit: HCR Resources



Clean Energy Initiative (CEI): Provides additional funding to LIHTC projects reaching Stretch goals aligned with decarbonization & efficiency measures. CEI is funded through a partnership and commitment of \$100M from NYSERDA

Climate Friendly Homes Fund (CFHF): Funded through the HTFC capital budget at HCR, this program will provide \$250M to electrify 10,000 units of small multifamily programs. The program will be administered by the Community Preservation Corporation (CPC) and their community and CDFI partners.

Weatherization Assistance Program (WAP): Provides weatherization services to LMI households through a network of non-profit community action agencies. Funded through DOE and LIHEAP programs annually about \$60M serving around 8,000 units

Technical Support: The Sustainability Unit provides support to HCR's F&D and SAMU teams for IPNA review, Sustainability Guidelines compliance, and other decarbonization scopes of work

Overview NYS CEI: Current Available Funding

Phase	New Construction	Adaptive Reuse	Existing Buildings
Funding	\$5,500/unit Max Project awards: \$1.375M NC Boost: \$7,500/Unit, Max Project awards: \$1.5M	Adaptive Reuse: \$12,500/unit Max Project Award: \$2.5M*	If all three eligible scopes are selected: \$25,000/unit Max Project Award: \$5.625M*
Eligible Projects	Meets ONE of the Stretch goals in Section 1 of the Sustainability Guidelines <i>(LEED BD+C Gold AND LEED Zero, PHI/PHIUS Certification, OR EGC+)</i>	Meets one of the stretch goals in Section 1 of the Sustainability Guidelines <i>(LEED BD+C Gold AND LEED Zero, PHI/PHIUS Certification, OR EGC+)</i>	Selects at least one of the eligible scope item: 1. Electrification of space heating 2. Electrification of DHW systems 3. Building Envelope & ventilation
Notes	Boost Eligibility: 1. <60 units AND >4 stories 2. Project team has not certified a passive at time of application 3. >20 stories above grade 4. Total energy cost is less than \$1,000/unit (modeled)	*If SHPO designation, an Adaptive Reuse may follow the Existing Building term sheet, with a waiver, for funding and scope	<i>Details of each scope criteria on the next slide</i>
Requirements	All projects must pay into SBC (Systems Benefit Charge) through their local utility Cannot receive NYSERDA MPP, NC-H, or BOE funding for construction, Existing Buildings may not receive utility AMEEP funds when accepting CEI funds All CEI funding includes eligible amount of UP TO \$1,000/unit for soft cost, as part of max award		

Existing Buildings Three Eligible Funding Goals

Phase	Goal 1: Electrification of Heating System	Goal 2: Electrification of DHW system	Goal 3: Building Envelope Improvement & Ventilation
Funding	\$8,500/unit max	\$4,000/unit max	\$12,500/unit max
Scope of Work	Replace existing fossil-fuel (e.g., gas, oil, propane fired) based heating equipment or electric resistance baseboard systems with high-efficiency, all-electric heat pumps	Replace existing domestic hot water systems with high performance all-electric heat pump system	<p>Envelope: Pursue Envelope Stretch Goals listed in Section 2 of the Existing Building Sustainability Guidelines (p23-24)</p> <p>Ventilation: Pursue Ventilation Stretch Goals listed in Section 2 of the Existing Building Sustainability Guidelines (p31)</p>
Requirements	<p>Required Building Envelope Conditions</p> <ul style="list-style-type: none"> A high-performance envelope is required when electrification of heating is being pursued. 	Equipment must comply with the Adaptive Reuse Baseline Requirements for Domestic Hot Water equipment listed in Section 2 of the Existing Building Sustainability Guidelines (p 30)	<ul style="list-style-type: none"> Envelope improvements that contribute to an overall building envelope that is at least 15% more energy efficient than 2020 ECC Implementation of an engineered natural ventilation system in compliance with ASHRAE 62.1 Section 6.4 Natural Ventilation Procedure Existing buildings with natural ventilation systems installing through-wall exhaust fans in kitchen and bathrooms Installation of energy recovery ventilator (ERV) or heat recovery ventilator (HRV) equipment

Climate Friendly Homes Fund

Eligible Use of Funds

- CFHF **hard costs** will cover systems upgrades and limited energy conservation measures to support:
 - Heating system replacement with high-efficiency heat pumps for heating and cooling
 - DHW system replacement with high-efficiency heat pump water heaters
- CFHF funds can be used to cover associated **engineering/consultant costs, originations fees, closing costs, and legal fees**
 - Proposed cost share for energy audit and scoping ahead of loan closing
 - Projects that close and move to construction would be reimbursed for their share of audit costs
 - Borrower will be responsible for benchmarking fees for a total of 5 years
- Estimated available funding to cover hard costs: \$18-\$22k/unit**

Ineligible Use of Funds

- Solar PV or other on-site renewables
- Health & Safety or deferred maintenance items
- Energy efficiency measures outside of designated scope
- Cannot be combined with mortgage financing to fund additional updates

Program staff and partners will work with participants to identify incentives, rebates, and other sources of capital to cover ineligible scope items that improve building operations and further reduce carbon emissions

CLIMATE FRIENDLY HOMES FUND

The Climate Friendly Homes Fund (CFHF), administered by The Community Preservation Corporation, provides financing for existing, 5-50-unit buildings in New York State with a focus on replacing older and less energy-efficient systems with all-electric, high-performance heating, cooling, and hot water heating systems.

With \$250 million in New York State funding, CPC and New York State Homes and Community Renewal aim to finance electrification retrofits in at least 10,000 units of multifamily housing that serve economically disadvantaged communities. These funds will empower small building owners to identify and execute a scope of work to improve the energy efficiency of their buildings and decrease their greenhouse gas emissions.

By catalyzing the adoption of new, energy-efficient technologies, the program will advance New York State and CPC's commitments to supporting multifamily building owners in their transition to a green economy and delivering the benefits of climate friendly homes to residents of low- and moderate-income neighborhoods.

In order to maximize impact and the reach of the program, CPC has identified like-minded green lending institutions, CDFIs, and other community-based partners to collaborate on the identification and screening of building retrofits opportunities across the State.

Program Summary

Program Size	\$250,000,000 for 10,000 multifamily units
Property Eligibility	Multifamily residential buildings through either: <ol style="list-style-type: none"> Regulated by the State (e.g., hotels, dormitories, etc.) Located in a designated area (e.g., HUD, State's designated areas) State's designated areas
Other Eligibility Requirements	<ol style="list-style-type: none"> Owner <ul style="list-style-type: none"> Eligible for financing Eligible rental property <ul style="list-style-type: none"> Eligible for financing CPC or partner lender approved

	<ul style="list-style-type: none"> The existing property uses either fuel oil, natural gas, propane or electric resistance for the primary space heating. Existing building envelope performance; either via an existing IPFNA or a Property Condition Assessment completed by a consulting engineer engaged by Program Administrator to perform services in connection with Program and aligned with the State decarbonization goals. Existing energy efficiency, based on average annual energy usage of most recent past 2 years Existing owner and tenant meter structure Date and scope of last major refinance
Payment Structure	<ul style="list-style-type: none"> Property owners will receive funds in the form of a forgivable loan. No payments of principal or interest; fully forgiven after the loan term. Property owner shall enter into a Promissory Note and Loan Agreement. Property owner shall execute a Restrictive Covenant which shall impose certain requirements, and shall be recorded against the improved property. Properties which are sold or refinanced without state written consent, which shall not be unreasonably delayed or withheld, within 10 years (or for projects with either: 15 units or less or, loan/grant amounts of \$375,000 or less, 5 years) of receiving funding may trigger repayment of a portion of the funding, unless explicitly stated otherwise.
Security	Restrictive Covenant recorded against the property.
Loan Amount	Up to \$24,200 per unit, which will cover the eligible scope of work and eligible program delivery costs (soft costs).
Term	10 Years: <ul style="list-style-type: none"> Projects with 15+ units OR Loan amounts greater than \$375,000 5 Years: <ul style="list-style-type: none"> Projects with less than 15 units OR Loan amounts less than \$375,000
Interest Rate	N/A
Loan Origination Fee	25 basis points of loan amount multiplied by number of years in servicing period (10 years, or for projects with either: 15 units or less or, loan amounts of \$375,000 or less, 5 years) <ul style="list-style-type: none"> Projects with 15 units or less or, loan amounts of \$375,000 or less: Servicing fee to be paid in full by borrower at closing (calculated based on discounted cash flow analysis). Projects with greater than 15 units or, loan amounts greater than \$375,000: Borrower to be given two options for payment: <ul style="list-style-type: none"> Option 1: Servicing fee to be paid in full by borrower at closing (calculated based on discounted cash flow). Option 2: Servicing fee to be paid annually by borrower.
Reserves	Reserves will be established at loan closing from funds provided by the eligible building owner for the following: <ul style="list-style-type: none"> Required benchmarking fees (3 years collected up front)

Weatherization Programs

Federal Weatherization Assistance Program



Weatherizing a home has multiple benefits. In addition to the main goal of creating a more energy-efficient dwelling, an investment in weatherization also has a positive impact on local employment and energy costs and generates energy and nonenergy benefits for the community.

Weatherization services improve existing homes building envelope through air sealing, HVAC improvements, & health and safety improvements

NYS Weatherization Assistance Program

- WAP+ LIHEAP funds for NYS WAP
- Our average cost per unit: \$8,006/unit
- On average 7,000/units or homes a year
- Work on Single Family & Multifamily
- A network of 50 Subgrantees, or Community Action Agencies (Non-Profit community

NYSERDA EmPower Program

- Serves ~ 5,000 units a year, + new funding!
- Works with 1–4-unit homes
- Able to decarbonize properties through electrification



SHNNY 2023:

Local Law 97 & Affordable Housing:

Path 1 : The Prescriptive Path

If building includes any of the following:

- %35 of units subject to rent regulation (regardless of any income restrictions), OR
- Is an HDFC co-op (not a rental), OR
- Has 1+ units that participate in a federal project-based housing program (e.g. Section 8, Section 202, Section 811, or CoC), OR
- Participates in NYCHA PACT

By 2024,

- Demonstrate that emissions are below the applicable 2030 limits, OR
- Show that applicable Prescriptive Energy Conservation Measures have been fully implemented

File a one-time report by May 2025

Path 2 : The 2026 Path

If building does not fit into Path 1 and:

- Has 1+ rent regulated units and no more than %35 of units subject to rent regulation (regardless of any income restrictions)

- Meet emissions limits starting in 2026, and face penalties for exceeding the limits

File annual reports starting May 2027

Path 3 : The 2035 Path

If building does not fit into Path 1 or 2, and:

- Is a Mitchell-Lama with no units that participate in a federal project-based housing program, OR
- Has no rent regulated units and has 1+ units that are income restricted through certain loans, grants, real property tax benefits (e.g. 420-c, Article XI, UDAAP) or property disposition programs

- Meet emissions limits starting in 2035, and face penalties for exceeding the limits

File annual reports starting May 2036

Local Law 97 – Prescriptive Measures (updated)

Must implement or show compliance with all applicable measures:

- Adjusting temperature set points for heat and hot water
- Repairing visible heating system leaks
- Confirm heating systems are in good operating condition
- Temperature controls (TRV) or insulated radiator enclosures (all radiators or based on a survey of overheated apartments)
- Insulation of exposed pipes for heating and/or hot water
- Insulation of **steam** system condensate tank or water tank
- Heating system sensors & boiler controls for steam/ hydronic heating
- Replacement or repair of all **steam** traps as needed*
- **Steam** system master venting upgrades as needed*
- Installing timers on intermittent exhaust fans*
- Installing radiant barriers behind certain radiators*
- Ensure common area lighting installed between 2010 and 2024 comply w/ Energy Code in effect at the time of installation
- Confirm or fix weatherstripping/ caulking/ etc. in common area

LL97 PRESCRIPTIVE MEASURES: COSTS FOR AVG. DWELLING UNIT (1.5 BR - 700 sf)					
Scope	Cost/ DU	Incentives	Net Costs	Annual Savings/ DU	Payback (Years)
Low (e.g. non-steam building)	\$1,540	\$525	\$1,015	\$85	11.9
High (e.g. all PECMs required)	\$4,620	\$2,000	\$2,620	\$255	10.3
Average	\$3,080	\$1,263	\$1,818	\$170	11.1

Local Law 97 – Meeting 2030 Limits

RANGE OF BUILDINGS	SAMPLE SCOPES TO MEET 2030 LIMITS	GHG REDUCTIONS
Buildings already performing close to 2030 targets	<ul style="list-style-type: none"> -Invest in maintenance -Install low flow fixtures -Air seal building -Heating distribution system upgrades 	up to 29%
Buildings that are significantly underperforming	All of the above PLUS: <ul style="list-style-type: none"> -Roof insulation & air sealing -Upgrade to high efficiency heating equipment -Heating system controls & sensors -Lighting upgrades 	29-48%
The worst performing buildings (the worst 20 th percentile, many are oil buildings)	All of the above PLUS: <ul style="list-style-type: none"> -Install heat pump hot water heaters -Upgrade old windows 	44-63%

Most buildings subject to the “2035 Pathway” will need to make deeper improvements to meet 2035 limits but won’t need to electrify until after 2040 (see the Decarbonization Roadmap for further information)

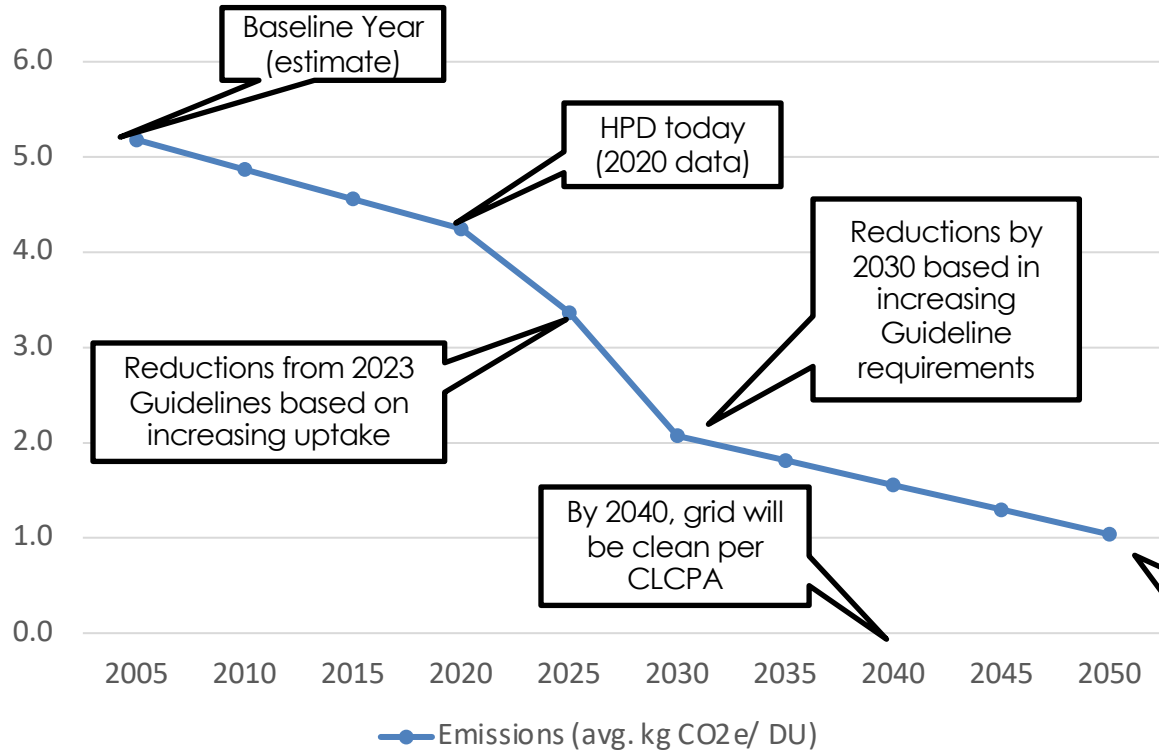
Local Law 97 – Rules Coming

- Rules expected summer 2023
- Rules will include penalties for failure to report and for non-compliance
- Rules will include clarification of the PECMs
- Rules will likely include an alternative pathway for Article 321 (the Prescriptive Pathway)
- Rules will likely include a covered buildings list, or required documentation to prove status
- Rules will likely include information about change in compliance status



HPD's Design Guidelines

HPD's Plan for Decarbonization

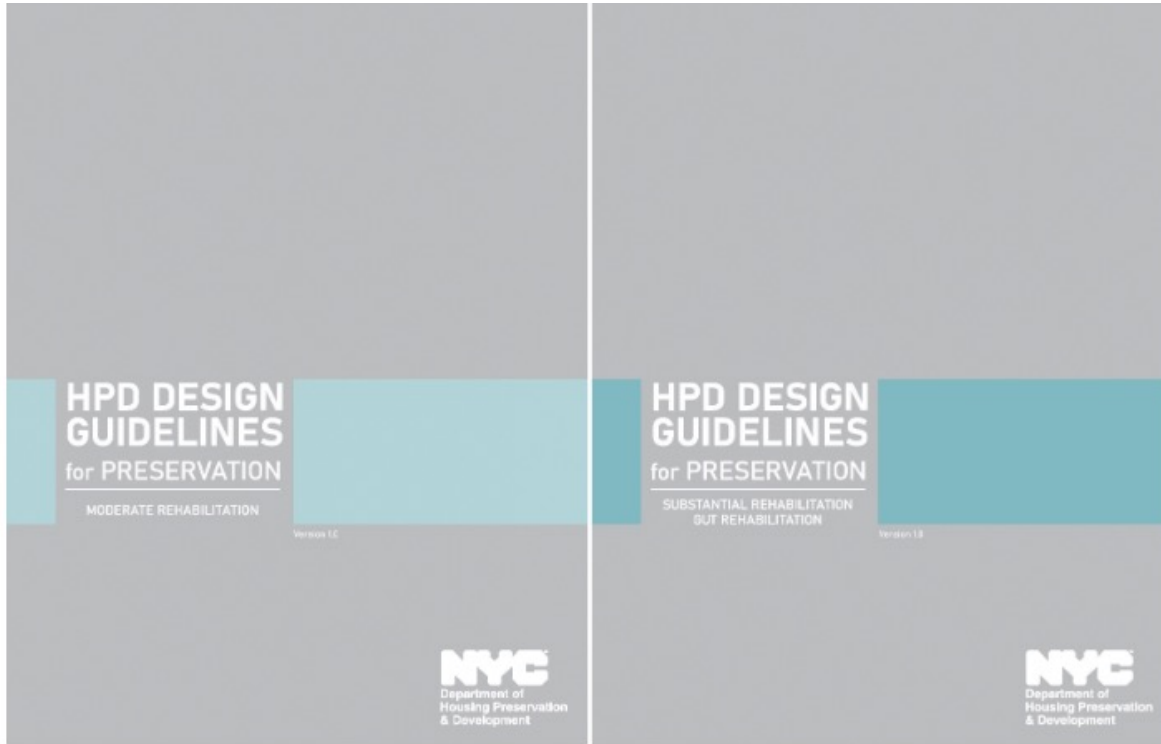


OUTCOME:

40% Portfolio-wide reduction by 2030

Goal of an 80% Portfolio-wide reduction by 2050

HPD's Design Guidelines



[Preservation Design - HPD \(nyc.gov\)](http://nyc.gov)



[New Construction Design - HPD \(nyc.gov\)](http://nyc.gov)

Design Guidelines: Key Criteria

CRITERIA	Mod Rehabs	Sub & Gut Rehabs	New Construction
1 Core Requirements	No 3 rd Party Certification Meet 2030 LL97 targets Reach: Exceed LL97 requirements	EGC or LEED Gold or Above Meet longer term LL97 targets Reach: EGC+ and/or meet LL97 2050 targets	EGC or LEED Gold Meet 2050 LL97 targets* Reach: EGC+ and/or Passive House
2 Resiliency	New equipment above 2050s flood zone Cool roofs Reach: Cooling for Senior Housing	New equipment above 2050s flood zone Cooling for seniors* Reach: No residential uses below grade	Design to 2080's flood zone, Place of Refuge in Senior Housing Reach: Shaded open space for all buildings
3 HVAC	Limited Electrification* Clean/ seal balance existing ventilation Reach: Install mechanical ventilation	Strategic Electrification* New Performance Standards for HVAC Reach: Full electrification	Full Electrification* New Performance Standards for HVAC Reach: Geothermal/ Heat Recovery
4 Envelope & Efficiency	Prescriptive requirements	Covered by EGC	Covered by EGC
5 Health & Wellness	Prescriptive requirements Aging in place, accessibility	Most items covered by EGC Aging in place, accessibility	Covered by EGC New open space requirements
6 Broadband	Broadband in common areas	Broadband in common areas	Broadband required
7 Operations	Project manuals and staff/ resident training	Most items covered by EGC	Covered by EGC

**Signifies that a Design Waiver is available*

Financial Resources

HPD Pilot Funding Overview

Phase	\$15 Million Future Housing Initiative: Phase 1	\$24 Million Retrofit Electrification Pilot
Scope Requirements	<p>All Projects must include:</p> <ul style="list-style-type: none"> • All Electric Heating, Hot Water & Appliances AND • Certification w/ PHI/ PHIUS, ECG+ or LEED BD+C Gold & LEED Zero 	<p>Two Scopes available (may be combined):</p> <ul style="list-style-type: none"> • Scope 1: Electrification of Hot Water Heating + Low Flow Fixtures + Pipe Insulation • Scope 2: Electrification of Space Heating + Roof & Window Upgrades + Air-Sealing. Ventilation Upgrades and Electric Cooking are encouraged but not mandatory.
Funding	<ul style="list-style-type: none"> • Base Funding: up to \$5,500/unit • Base + Boost*: up to \$10,000/ unit • Max per project: \$1.375M • Max with Boost*: \$1.5M <p><i>Boost Eligibility includes Prevailing Wage projects, difficult to develop sites, first-timers, etc.</i></p> <p><i>Additional innovation funds may be available</i></p>	<ul style="list-style-type: none"> • Scope 1 (DHW): up to \$2,300/ unit • Scope 2 (Space Heating): up to \$24,000/ unit • Scope 1+2: up to \$26,300/ unit • Max per project: \$1M* <p><i>Additional funds may be available for multi-building projects on oil</i></p>
Eligibility Requirements	<ul style="list-style-type: none"> • Competitive Application • Must be a project in HPD's pipeline • Must be closing within 1-2 years 	<ul style="list-style-type: none"> • First-come-first-served • Must be a project in HPD's pipeline • Preference for 10 to 50-unit buildings on oil/ electric resistance or with equipment in flood zones • Scope 2 is only available for Sub Rehabs
Other Sources	<p>All projects must pay into SBC (Systems Benefit Charge) through their local utility</p> <p>Projects must seek Clean Heat Funding where available</p> <p>Projects may not receive NYSERDA MPP, NC-H, BOE, or Low Carbon Pathways funding for construction or utility AMEEP funding (for any building that is part of a Pilot)</p>	

HPD-NYSERDA Pilot Structure



PRE-DEFINED LOW CARBON SCOPES

New Construction:
All Electric Passive House

Retrofits: Electric
DHW and/or
Space Heating



DIRECT GRANTS TO OWNERS:

Covers incremental
cost of Low Carbon
Scopes

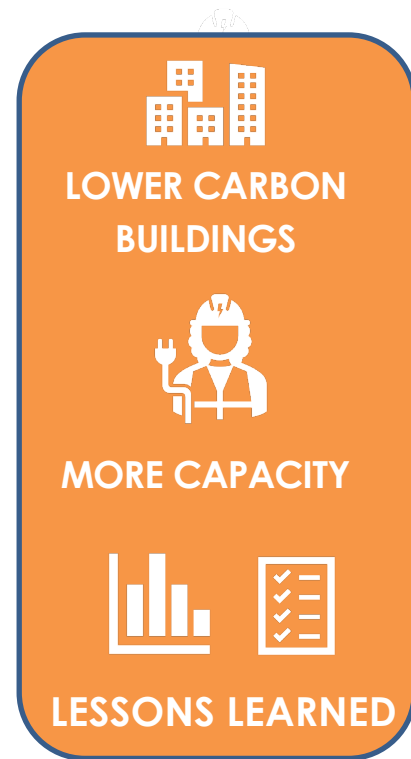
Paid directly to
owner during
construction



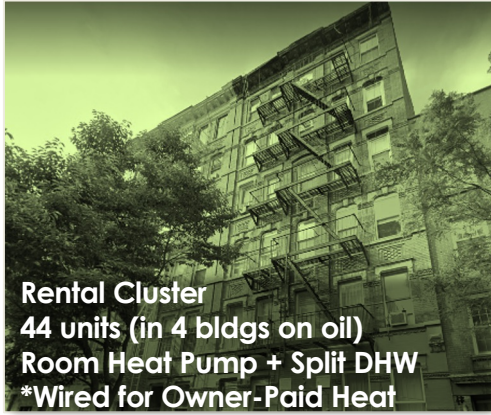
CAPACITY BUILDING:

Free Technical Support
to Development
Teams

Resources for owners,
designers and
residents



HPD's Retrofit Electrification Pilot: Status



OUTCOME:


Closed Projects: 3
projects w/ 153 units

Current Pipeline:
26 buildings w/ 769 units

Target: Up to 1,500 units

Up to 3,000 tons GHG
emissions abated

Additional Resources

Español ▶ Translate | ▼ Text-Size

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Underwriting Electric and High-Performance Buildings

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HPD is committed to working toward the City's goals of an 80% reduction in emissions by 2050, while focusing on the resiliency and health of our buildings and our residents. To achieve these goals, we have committed to fast-tracking equitable decarbonization and releasing [Design Guidelines](#) and initiatives that will ensure that these goals can be met across our portfolio of projects.

To support this work, HPD has also developed policies, standards, and tools to support electrification and high-performance buildings:

- [HDC's 2023 Maintenance and Operations Standards](#): The new All Electric Maintenance and Operating Expense Standard covers electric heating, hot water, and owner-paid cooling, and has a separate heating standard for Passive House.
- [HPD'S Underwriting High Performance Worksheet \(coming soon\)](#): Passive House projects may choose to underwrite to a higher performance level using HPD's Underwriting High Performance Worksheet if they have an energy model. Please ask your project manager or contact the Sustainability Office if you need to access the worksheet.
- [HPD's 2023 Utility Allowance Table](#) for Electric Heating, Hot Water and Air Conditioning.
- [HPD's Electric Heating Policy](#): Outlines HPD's policies around electric heating and hot water, including information about which equipment may be used and when resident-paid heating is allowed.
- [HPD's Resident-Paid Heat Policy](#): Outlines HPD's policies and guidelines for resident-paid heating and hot water, which is allowed for certain HPD programs and with HPD's prior approval.



Additional Resources

Retrofit Electrification Pilot: Tools & Resources

HPD and NYSERDA Electrification Pilot - FAQ Series

Heat pump system design

Heat Pump Water Heaters (HPWH) provide domestic hot water (DHW) in buildings. They are similar to "regular" hot water heaters using gas or oil but use highly efficient electric heat pumps instead of fossil fuel combustion.

What is a heat pump water heater?

Heat Pump Water Heaters (HPWH) provide domestic hot water (DHW) in buildings. They are similar to "regular" hot water heaters using gas or oil but use highly efficient electric heat pumps instead of fossil fuel combustion.

What are the requirements for heat pumps?

Structural design decisions for any system using air source heat pumps will benefit from the expertise of a structural engineer. Here are some answers to questions that will support your team as you determine the best design for your heat pump system.

What is a heat pump?

Air Source Heat Pumps (ASHPs) are high-efficiency electric appliances that provide heating and air conditioning. The components are modular, allowing multiple indoor units in a single or multiple apartments to be connected to a single outdoor unit via refrigerant lines. Occupants can adjust the temperature using controls in each room.

What are the different types of Heat Pumps that the Pilot supports?

- Split systems consist of two components, an outdoor unit connected to a single or multiple indoor units in a building. Each split system can be placed on an apartment electrical service and the heating and cooling can be part of that resident's utility account. Alternatively, it is possible to use these systems in the building's central utility room, or more split could connect several apartments (e.g. studio units) as long as it is on the house meter.
- "Tiny Split" (variable refrigerant flow) is a type of centralized commercial A/C/R system where a large outdoor unit is connected to indoor units in multiple apartments. Each apartment has its own controls. For VRF, heating is paid for by the owner and cooling can be metered, paid or not metered and billed to the residents.

What are the benefits of heat pumps?

Heat pumps do not consume fossil fuels, so they are better for the environment. They are better for buildings because they:

- They do not use combustion gases and particles into the air, which means less pollution and better indoor air quality.
- They are more efficient than gas furnaces, which helps buildings meet NYC's ambitious climate goals.
- They do not require equipment in the basement, so they are not subject to flooding.
- They have a thermostat in each room, occupants can adjust comfort in occupied spaces.
- They provide heating, which is an excellent way to protect residents from the winter weather, increasing heat and hot water needs, and eliminates the use of leaky, low efficiency window units.
- They are three times as efficient as electric resistance systems.

Where/How are outdoor units located?

Outdoor units typically go on the roof but can also be mounted on exterior walls or in yards where utility access allows. When located on the roof, units are set on the roof or mounted on parapets, and can be parapet to take up less space. When located on walls, they need to be clear of windows and doors.

Where/How are indoor units located?

Indoor units are usually mounted high on the wall, with one in each habitable room. Floor mounted units are also possible but not up more floor space. Ducted units are available to allow more than one room to be served with a single indoor unit and temperature control, using ductwork. For gas rehab, it is possible to have a concealed unit in the ceiling that is ducted to each room.

What type of maintenance is needed?

Indoor units have washable filters that should be washed periodically. The outdoor units should be checked periodically to ensure they are free from leaves and other debris. Every five years it is important to have a service person check the coils and condensate lines in each apartment.

How long do they last?

These systems typically last for at least 15 years. If properly maintained they can last more than 20 years.

NYC Department of Housing Preservation & Development | NYSERDA | Tatem

HPD ELECTRIFICATION PILOT: TECHNICAL REQUIREMENTS

Hot Water Heat Pump (HPWH) Technical REQUIREMENTS

The following practices shall be followed for all projects. These are in addition to all requirements outlined in NYC codes, zoning, NYS Clean Heat Program Requirements and the HPD specifications.

HPD-NYSERDA Retrofit Electrification Pilot: TECHNICAL REQUIREMENTS

Heat Pump Technical Requirements

April 2022

The following practices shall be followed for all projects. These are in addition to all requirements outlined in NYC codes, zoning, NYS/CofE Clean Heat Program Requirements, and the HPD specifications. In some cases, these requirements are more stringent than required by codes or by the NYS/CofE Clean Heat requirements, and in those cases, these requirements shall be followed.

Split Systems

- Must meet or exceed NYS Clean Heat requirements.
- Minimum 10-year parts warranty, 5-year warranty on labor.
- Design requirements:
 - System shall be designed to meet Clean Heat "Full Load" requirements (heat pumps serve no gas of building load).
 - Locate outdoor units to minimize length of outdoor piping
 - Electric resistance backup shall not be used
 - Heat pump shall have a variable speed compressor.
 - Size the heat pump to the heating load.
 - Electric resistance backup heat is not permitted.
- Consider best practices as outlined in HPD/NYSERDA best practices, including:
 1. Roof Considerations for Heat Pumps
 2. Electrification Strategy

These can be found at the following web site:
<https://www1.nyc.gov/site/hpd/service-requests-and-information/hpd-nysersda-retrofit-electrification-pilot.page>

NYC Department of Housing Preservation & Development | NYSERDA | Tatem

ATTACHMENT 1 MAINTENANCE SERVICE CONTRACT CHECKLIST

Get the most out of your heat pump

Tips to maximize comfort and minimize cost

Programming tips

For programmable thermostats, system settings should be pre-set by the contractor, but you always adjust them to fit your own lifestyle. The up/down arrows let you temporarily override settings as needed.

MODE SYSTEM: Program the heat pump mode to "Heat" in winter and "Cool" in summer rather than using Auto mode.


FAN: Program the fan to "Auto" and adjust the vanes to direct airflow where you need it the most.

TEMPERATURE

IN WINTER: Program thermostat to 70-72° during the day and reduce by 2-4 degrees while you are sleeping. You can override the settings (using the up/down buttons) to increase comfort if your schedule changes or on very cold days/nights.

IN SUMMER: Program thermostats to 74-76 while you are at home, and to 78 degrees when you are not. You can always override the settings (using the up/down buttons) to increase comfort.

IN SPRING & FALL, or when the weather is nice, turn off the system and open the windows for free cooling!



PRO TIPS

- Air coming out of your heat pump may feel cooler than other types of heating, but it is still heating your apartment very efficiently.
- Heat pumps can be so quiet that you forget they are on. Always check before calling for service.

Conditioning the space


Try not to make big changes in the temperature programming. Turning the heat pumps off and on uses a lot of energy. Instead, find settings at which you are comfortable and stick with them.

When a room will not be in use for extended periods of time close the door to the space and turn the indoor unit off in the unoccupied room(s).

Keep the heat pump clean

Heat pumps work most efficiently when dust filters are clean. Vacuum or rinse dust filters when the indicator light comes on or if they become visibly dirty.

Wash or replace allergen cartridges according to manufacturer recommendations. Most experts recommend dust filters are cleaned at least once every season and more if you have allergies or pets.



Have questions? Need Help? Contact your building's super at _____

NYC Department of Housing Preservation & Development | NYSERDA | Tatem

Local Law 97 – Act Now! Campaign w/ KC3

Local Law 97 and Affordable Housing

Act Now!
Climate Week
2022

The Climate Mobilization Act of 2019 included Local Law 97 (LL97), which sets increasingly stringent caps on greenhouse gas emissions from the city's largest buildings starting in 2024. Most buildings over 25,000 square feet will be subject to LL97, and building that exceed their annual emissions limits will face financial penalties.

Buildings that include affordable and rent-regulated housing are not exempt. LL97 provides affordable and rent-regulated housing a number of different compliance pathways. 2024 is approaching quickly and we recommend that building owners **Act Now!** to start on a path to compliance.

To learn more about LL97, compliance pathways for affordable housing, resources and events, visit nyc.gov/LL97forHousing.

Connect with the NYC Accelerator

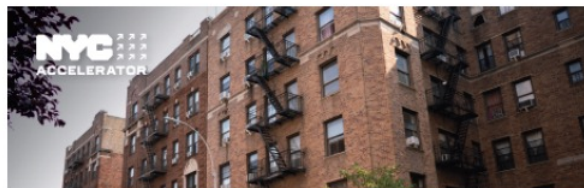
KC3, an affiliate of the NYC Accelerator, is providing free technical assistance to building owners to understand LL97, develop an appropriate work scope, identify incentives, and assemble a team to implement the work.

Contact KC3 at affordable@kc3.nyc.org or visit calendly.com/affordablenyc to connect with or request training from a dedicated affordable housing account manager.

Upcoming NYC Accelerator Events during Climate Week

- **Decarbonizing Our Community: Navigating Local Building Energy Law Compliance**
9/21/22 8:30am-10:30am
- **Ask Me Anything: LL97 and Affordable Housing**
9/22/22
- **Ask Me Anything: Financing and Incentives**
9/28/22 11:00am-12:00pm

NYC Department of Housing Preservation & Development



Local Law 97 – Building Emissions

Under NYC Local Law 97 (LL97), buildings larger than 25,000 square feet must meet increasingly stringent carbon emissions caps starting in 2024. This law helps New York City reach its goal of carbon neutrality by 2050.

Understanding Alternative Compliance Pathways for Affordable Housing

LL97 provides several different compliance pathways for affordable housing buildings. This document focuses on Article 321, which provides an alternative compliance pathway for certain affordable housing buildings.* By 2024, covered buildings must meet one of the following conditions:

- The annual building emissions did not exceed the carbon limits for 2030–2034. (Report certified by a registered design professional due by May 1, 2025).
- The building implemented the applicable Prescriptive Energy Conservation Measures (ECMs) by December 31, 2024. (Report certified by a retro-commissioning agent due by May 1, 2025).

*Buildings in which more than 95 percent of units are rent regulated, regardless of whether they contain units with income restrictions, HDC cooperatives, and buildings that include HUD project-based assistance (e.g., Section 8, 202, BR, CoC), including buildings on NYCHA land that participate in the FACTRAD program.



Learn more. Contact NYC Accelerator.

nyc.gov/accelerator | 212.666.9202
info@accelerator.nyc | [linkedin.com/company/nycaccelerator](https://www.linkedin.com/company/nycaccelerator)
NYC Accelerator is a program of the NYC Mayor's Office of Climate & Environmental Justice.

Prescriptive ECMs

1. Adjust temperature set points for heat and hot water
2. Repair heating system leaks
3. Maintain heating system
4. Install individual temperature controls or insulated radiator enclosures
5. Insulate heating and hot water pipes
6. Insulate steam system condensate tank or water tank
7. Install heating system sensors and boiler controls



Limited-Time Offer: NYC HPD Multifamily Buildings

Get help installing the measures required by Local Law 97 (LL97) today.

NYC Accelerator is partnering with Con Edison and the NYC Department of Housing Preservation & Development (HPD) to help HPD-financed buildings navigate LL97.

This is a limited-time offer. Eligible buildings will receive incentives per dwelling unit and per measure installed. The incentives will be paid on a first-come, first-served basis. If you do not qualify for this offering, other multifamily incentives may still be available.

Measures	Building Heating System Type (Incentive Per Residential Unit)		
	1-Pipe Steam	2-Pipe Steam	Hydronic
Boiler Clean & Tune: Maintaining the heating system, including but not limited to ensuring that system component parts are clean and in good operating condition.	\$14	\$45	\$30
Thermostatic Radiator Enclosure (TRE): Insulating radiator enclosures with temperature controls.	\$800	\$800	
Pipe Insulation: Insulating all pipes for heating and/or hot water.	\$100	\$100	\$100
Tank Insulation: Insulating all steam system condensate tanks and/or water tanks.	\$100	\$200	
Energy Management Systems (EMS): Installing indoor and outdoor weathering system sensors and boiler controls to allow for proper set-points.	\$280	\$300	\$350
Steam Traps: Replacing or repairing all steam traps so all are in working order.	\$600	\$700	
Master Venting: Installing or upgrading steam system master venting at the ends of main, large horizontal pipes, and tops of risers, vertical pipes branching off a main.	\$70	\$40	
Common Area Lighting: Upgrading lighting to comply with the standards for new systems set forth in section 902 of the New York City Energy Conservation Code and/or applicable standards referenced in such energy code on or prior to December 31, 2024.	\$6	\$6	\$6
Full Building Weatherstripping and Air Sealing: Where appropriate, including windows and doorwork, with focus on whole-building insulation.	Free	Free	Free
Insulation – Roof & Wall: Weatherstripping and air sealing where appropriate, including windows and doorwork, with focus on whole-building insulation.	\$350	\$350	\$350
Utility Controls: Installing timers on exhaust fans.	\$100	\$100	\$100

*Limited to three buildings per owner. If interested in submitting more than three buildings, all buildings must be under 100 units and are subject to review by Con Edison for acceptance on a case-by-case basis.



Learn more. Contact NYC Accelerator.

www.accelerator.nyc | 212.666.9202
info@accelerator.nyc | [linkedin.com/company/nycaccelerator](https://www.linkedin.com/company/nycaccelerator)

NYC Accelerator is a program of the NYC Mayor's Office of Climate & Environmental Justice.

Building Eligibility Requirements

- NYC HPD-subsidized housing
- Buildings between 25,000 and 75,000 sq. ft.
- Buildings with 5+ units
- Con Edison gas customer
- Buildings subject to Article 321 of LL97, which includes:
 - o Greater than 95% rent regulated units
 - o HDC co-op
 - o Buildings with HUD project-based assistance (Section 8, 202, etc.), including buildings on New York City Housing Authority land that participate in the FACTRAD program
 - o Does not already comply with LL97 2030 limits
- Buildings that meet Con Edison's eligibility requirements

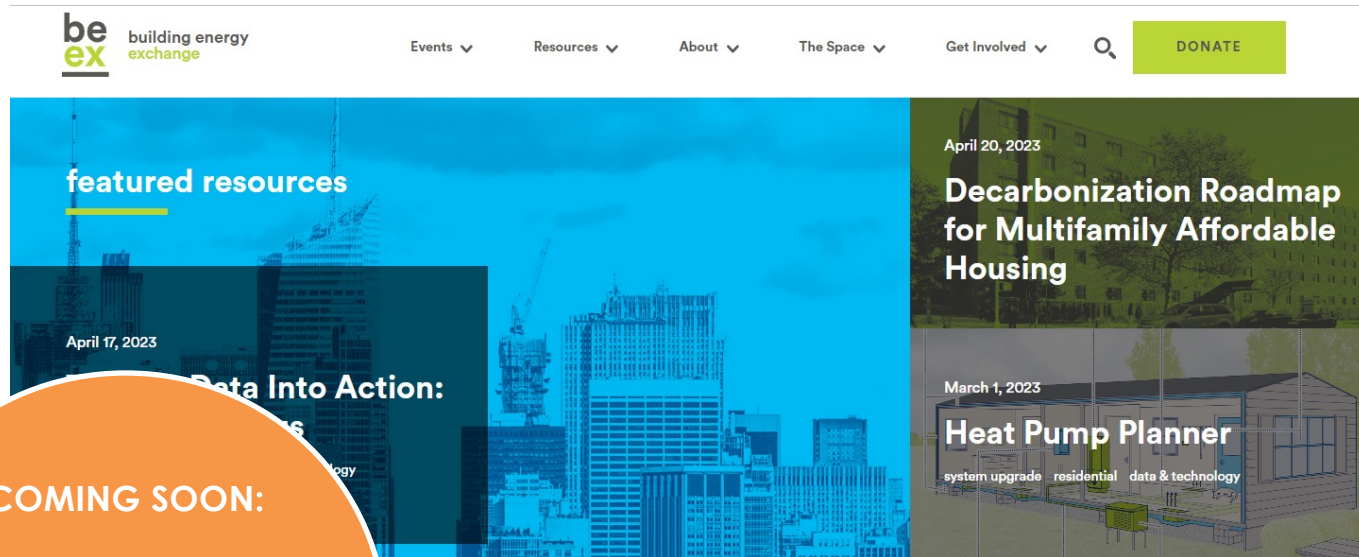
How It Works

- Contact NYC Accelerator to confirm eligibility
- Complete survey to identify which of the Prescriptive Energy Conservation Measures are applicable to your building
- Select a Participating Contractor to bid and install your package
- Submit your application to Con Edison and schedule a pre-inspection
- Install the package within two years of the preliminary offer letter from Con Edison and schedule a post-inspection
- Receive your incentive payment

Additional guidance on LL97 can be found on the Department of Buildings website: <https://www1.nyc.gov/site/sustainablebuildings/requirements/affordable-housing.page>

NYC Department of Housing Preservation & Development
conedison

Collaboration w/ BE-Ex (and others)



COMING SOON:

Climate Ready Buildings Training

Local Law 97 for Affordable Housing





Sustainable,
Inclusive
Communities.

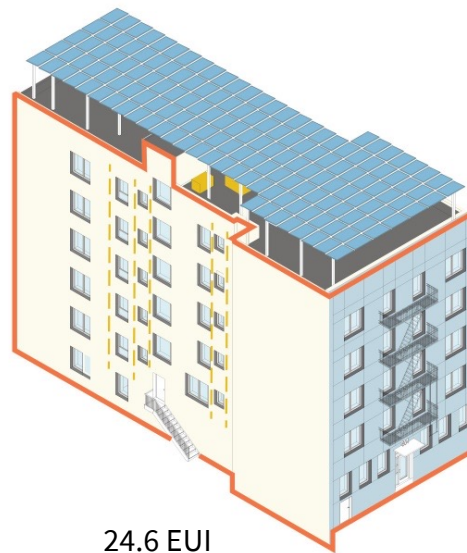




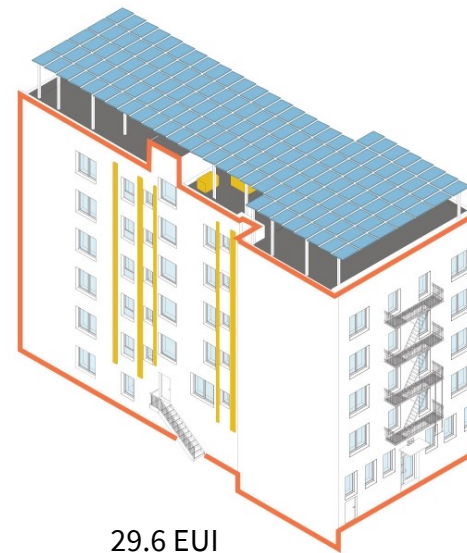


NYSERDA RetrofitNY Study

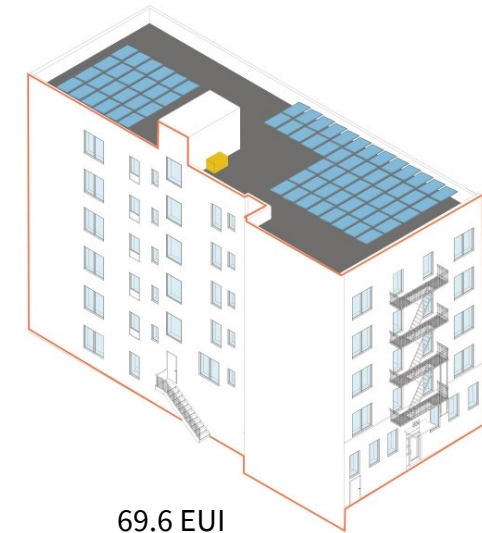
Efficiency Options:
Volmar Project



24.6 EUI



29.6 EUI
























69.6 EUI

1 Most Efficient
Approaching Net Zero (EUI: 24.6, with solar: 15.4)

2 NYSERDA RetrofitNY Proposal
Approaching Net Zero (EUI: 29.6, with solar: 20.4)

3 Final Plan for Development
(EUI: 69.6, with solar: 65.3)

	1	2	3	
Building Envelope	Street Facade	 Insulated panelized cladding system	Existing uninsulated brick walls	Existing uninsulated brick walls
	Sides and rear	 Stone wool 6" EIFS	Existing uninsulated brick walls	Existing uninsulated brick walls
	Roof	 R-30 Blown cellulose + R-16 Rigid insulation	 R-30 Blown cellulose + R-16 Rigid insulation	 R-30 Blown cellulose + R-16 Rigid insulation
	Air Tightness	 2.33 ACH50	 2.33 ACH50	 5.12 ACH50
	Windows	 Tilt & Turn Double glazed U-0.277 - SHGC 0.4	 Tilt & Turn Double glazed U-0.277 - SHGC 0.4	 Tilt & Turn Double glazed U-0.277 - SHGC 0.4 (AC panels)
	Building Systems	Heating & Cooling	 VRF	 VRF
Ventilation		 Central ERV with exterior risers (underneath insulation)	 Central ERV with exterior risers	Natural ventilation
DHW		 Heat pump water heater	 Heat pump water heater	 Heat pump water heater
Solar Array		 Pergola 42 kW	 Pergola 42 kW	 Roof mounted 19.76 kW
Lighting		LEDs + Daylight and occupancy sensors in common areas	LEDs + Daylight and occupancy sensors in common areas	LEDs + Daylight and occupancy sensors in common areas
Stoves		Standard Electric	Standard Electric	Existing Gas
Refrigerators		Energy Star	Existing	Existing

5 CORE PRINCIPLES OF HEALTHY, EFFICIENT, DURABLE, AND SUSTAINABLE BUILDINGS:



Continuous, Robust Thermal Control
Most basic level of energy efficiency. Hold on to the heat you've paid for.



Air Tightness
Next level of thermal control. Necessary to truly ensure energy efficiency.



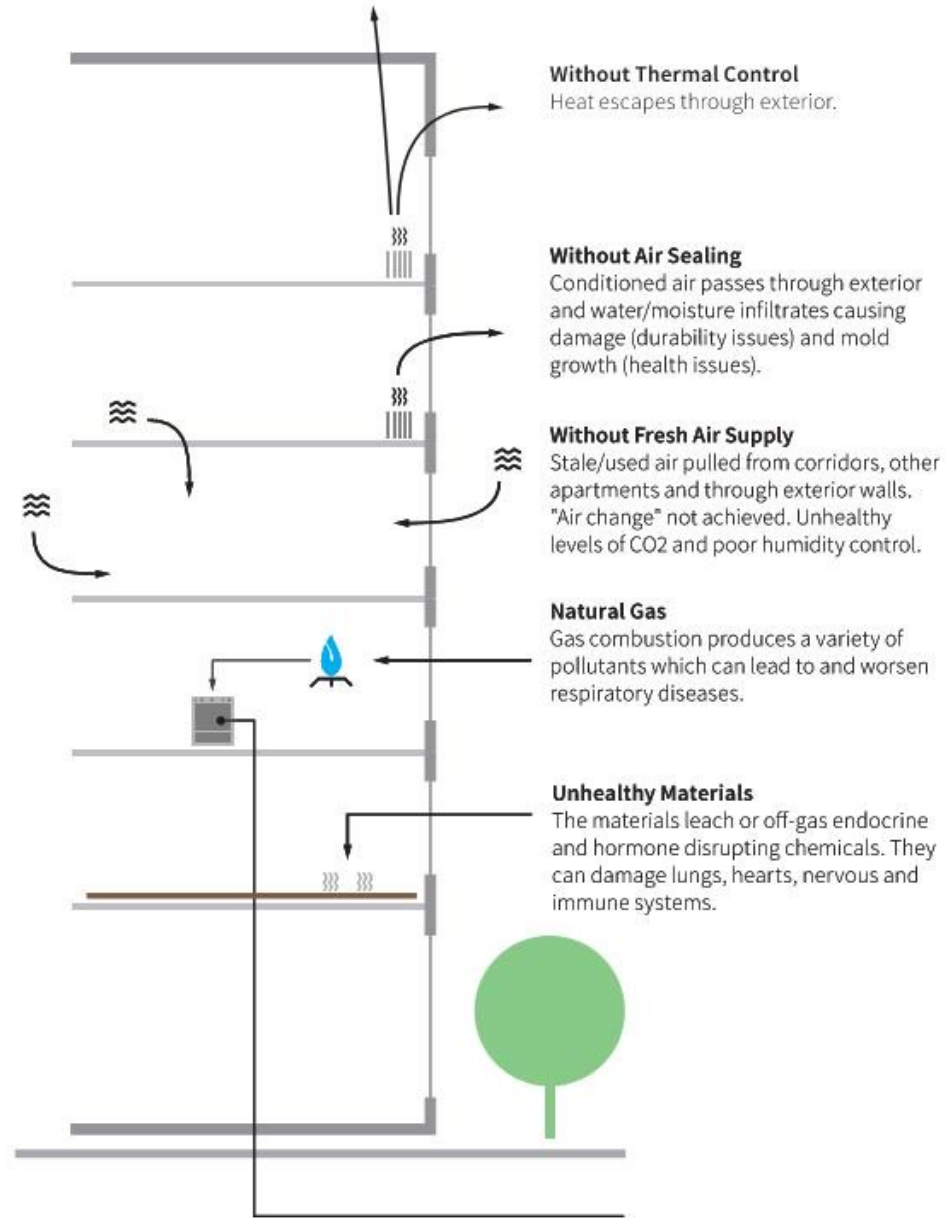
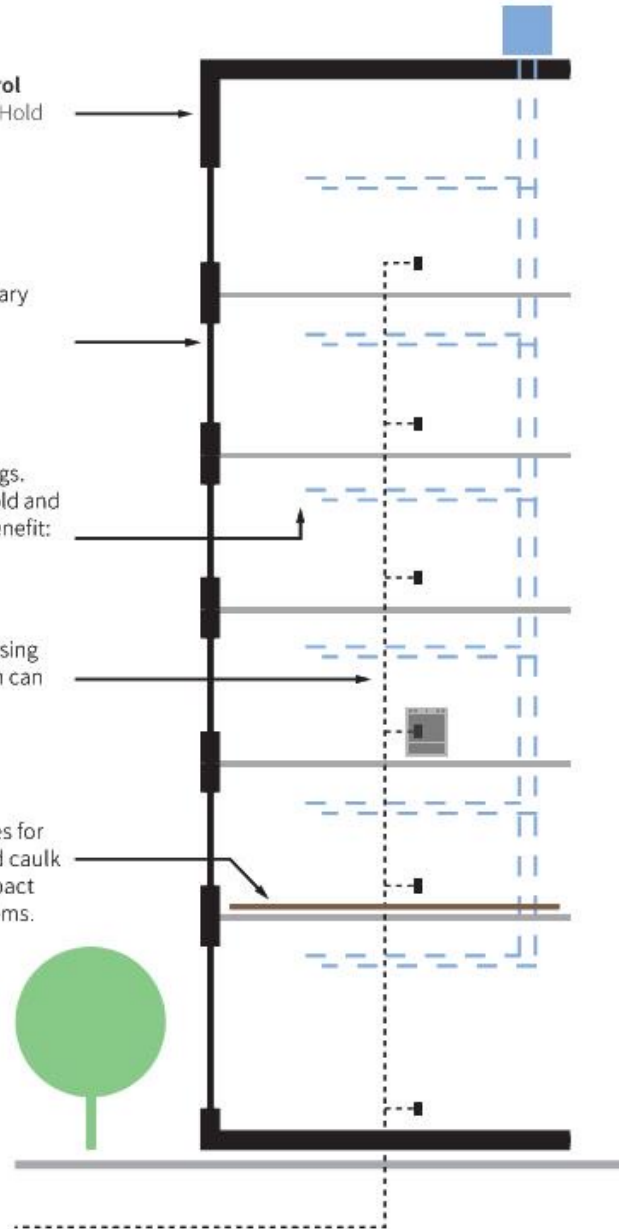
Energy Recovery Ventilators
Fresh air is critical for air tight buildings. Without this measure owners risk mold and resident respiratory issues. Added benefit: recovers additional energy for use.



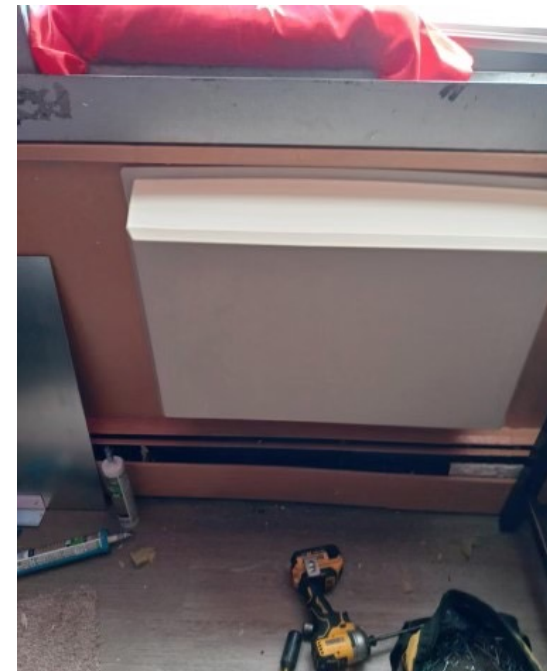
Efficient Electrification
If building an air tight structure and using technologies like ERVs, electrification can be cost effective for developers and healthier for residents.



Healthy Materials
There are good choices and bad ones for materials. Everything from paint and caulk to flooring and counter tops can impact the health of residents and ecosystems.



Thermal Control and Air Tightness

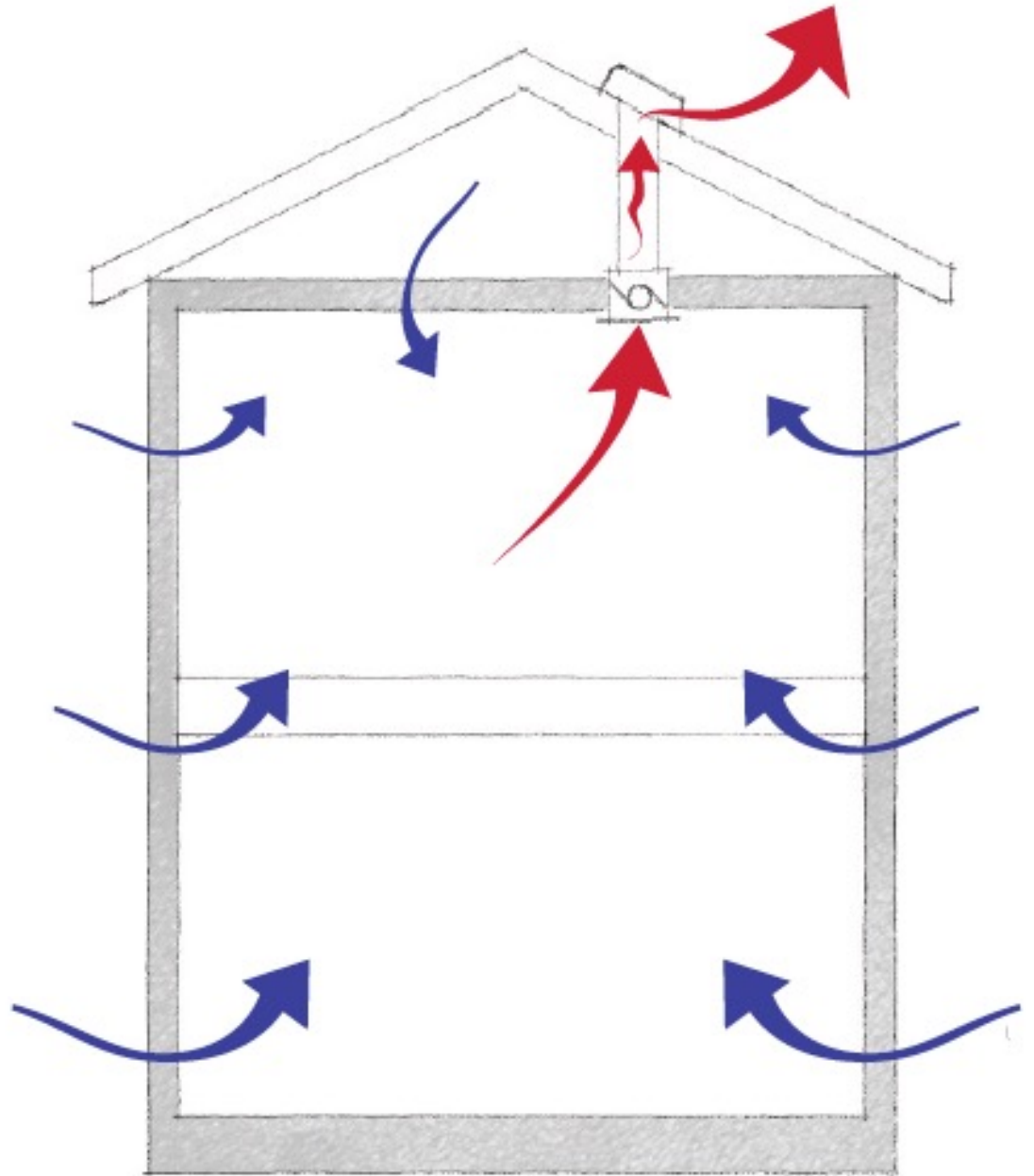


Thermal Control and Air Tightness



Energy Recovery Ventilation

Non-airtight enclosure with exhaust only ventilation means “fresh” air comes from leaky walls!



Energy Recovery Ventilation



EXISTING (above)

Exhaust in-line fans from
Kitchen, Baths + Corridors

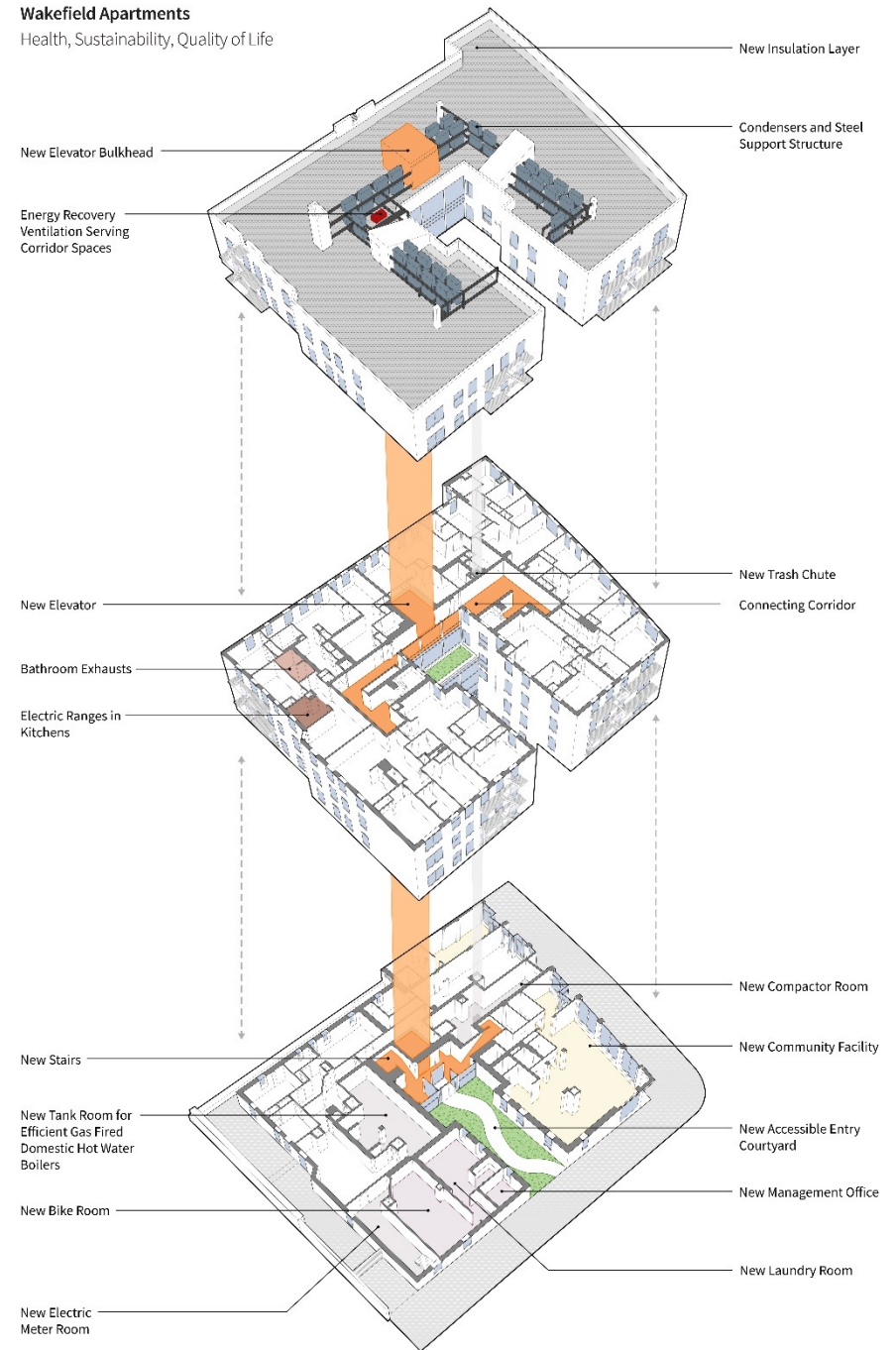
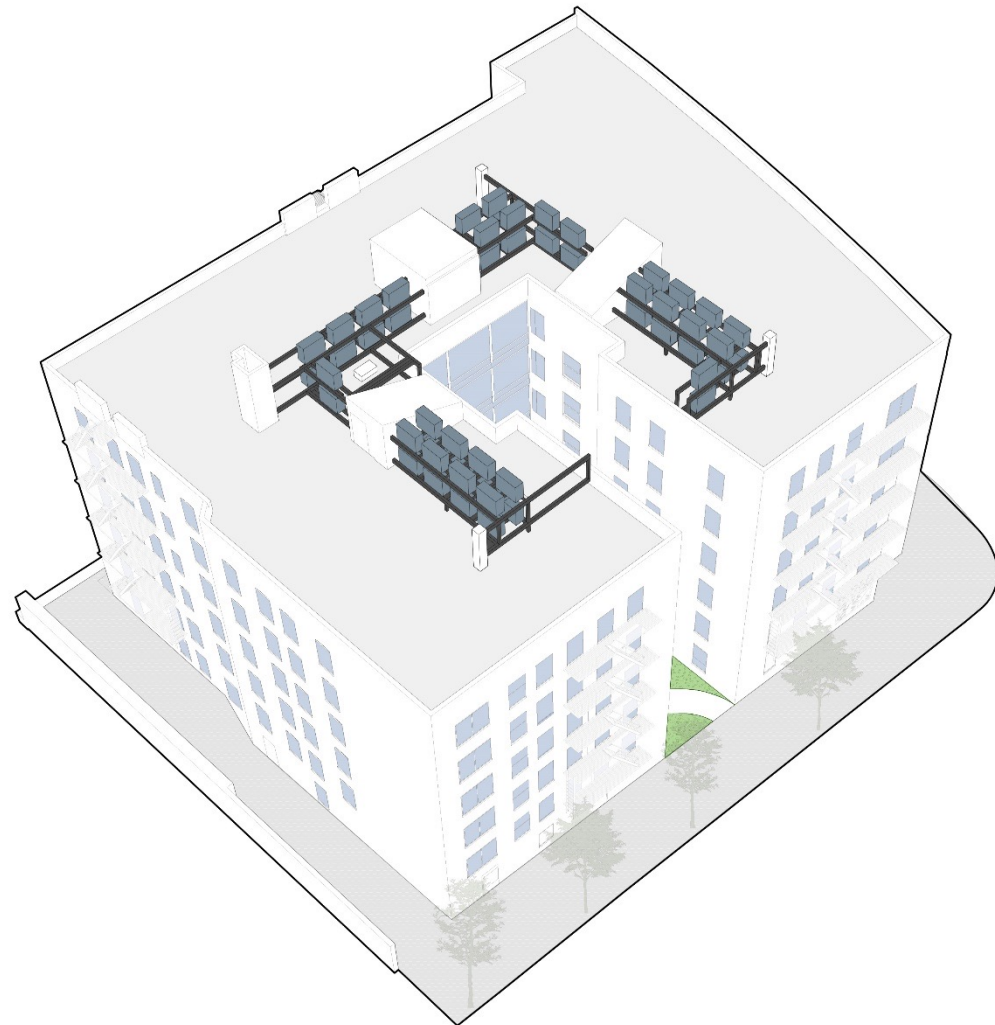


NEW (right)

ERV's on roof to serve corridor
(pressured hallways)

Electrification: Wakefield Apartments

Wakefield Apartments Health, Sustainability, Quality of Life



Electrification: heating and cooling



Through wall/window combined unit



Electrification: heating and cooling



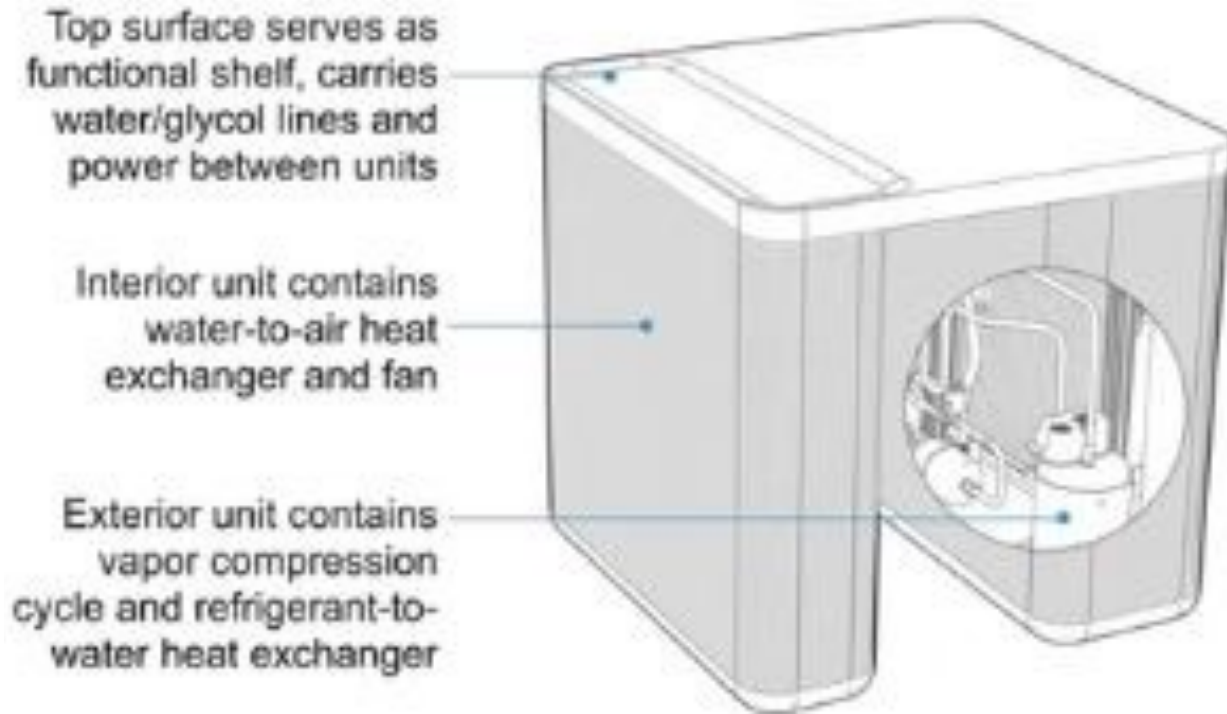
Condenser in existing sleeve + evaporator on wall



Electrification: air source heat pump to fan coil units

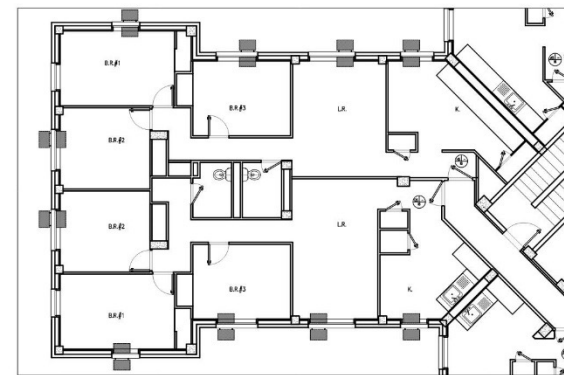
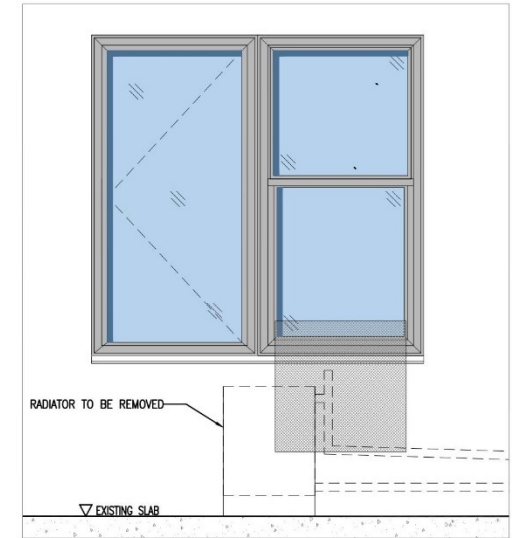
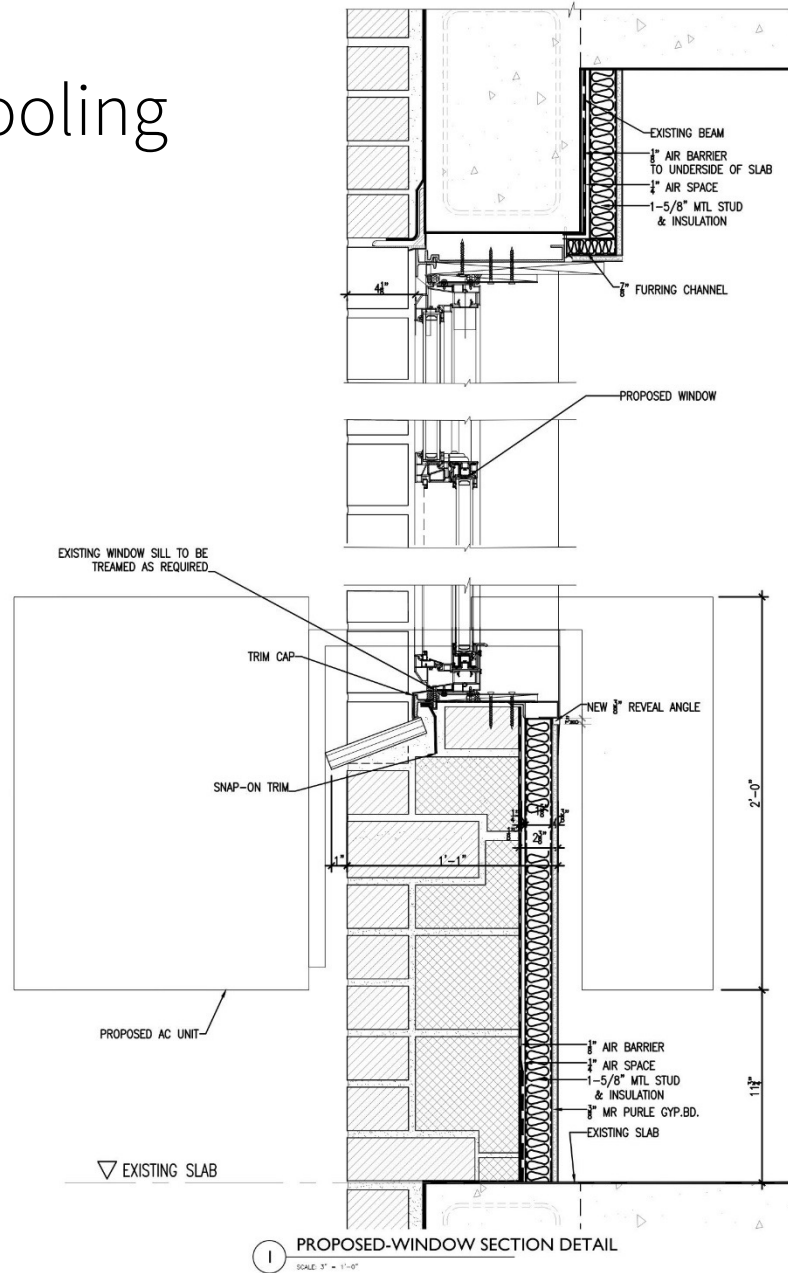


Electrification: heating and cooling

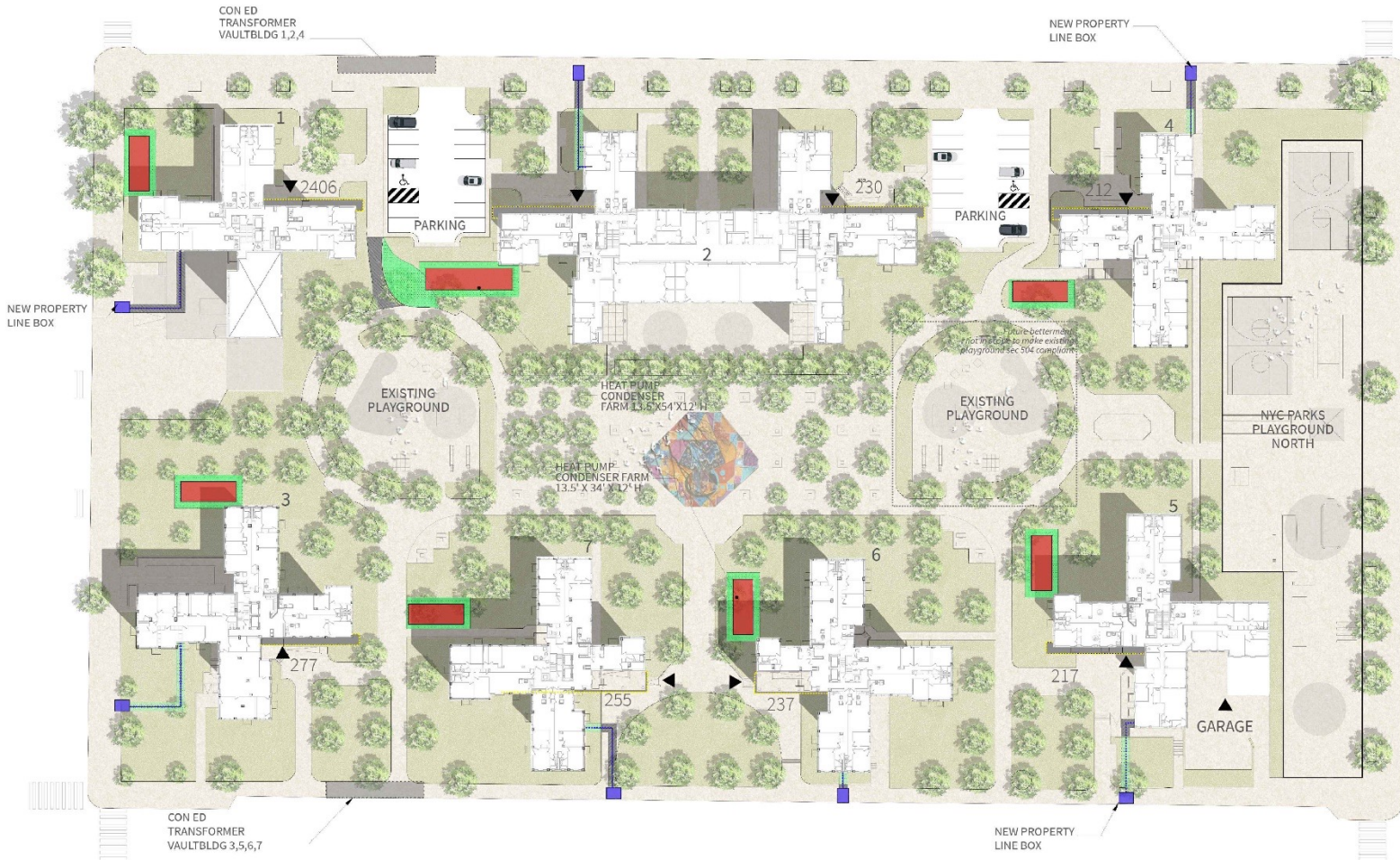


Saddle combined unit

Electrification: heating and cooling



Electrification: domestic hot water



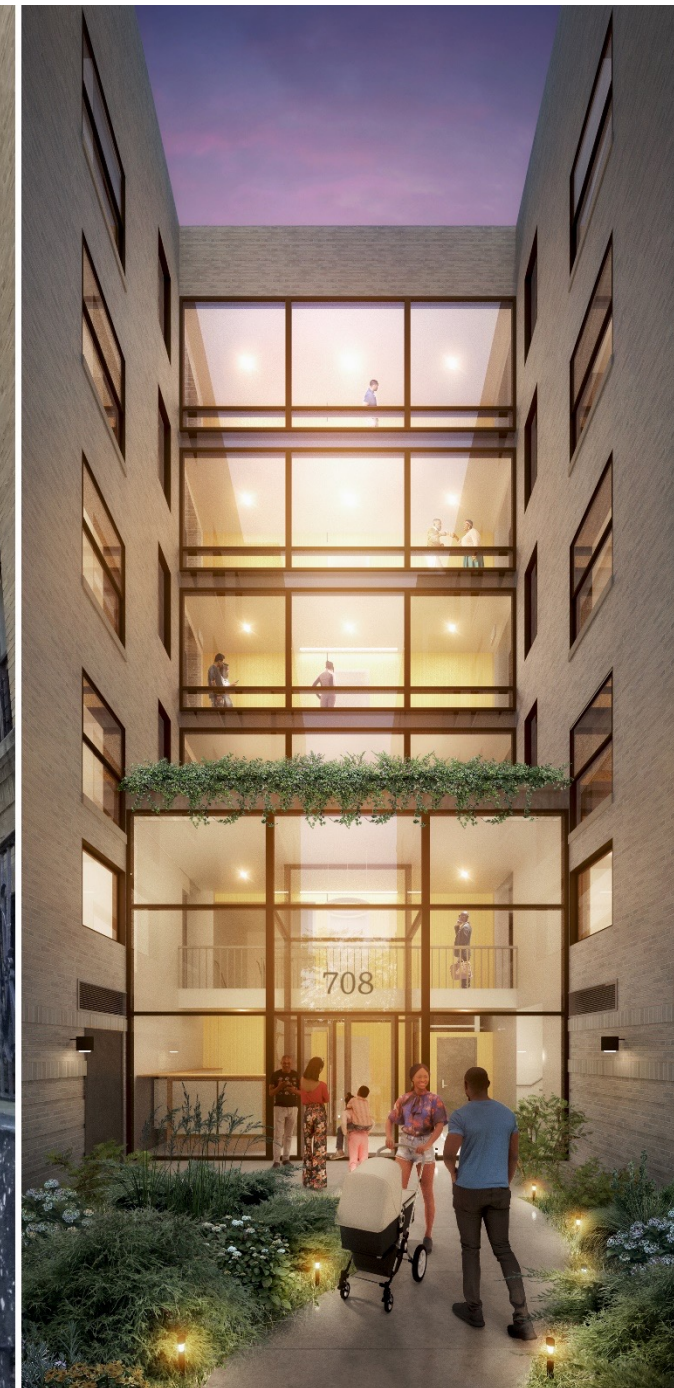
Electrification: stoves and indoor air quality



Sustainability, health and inclusivity

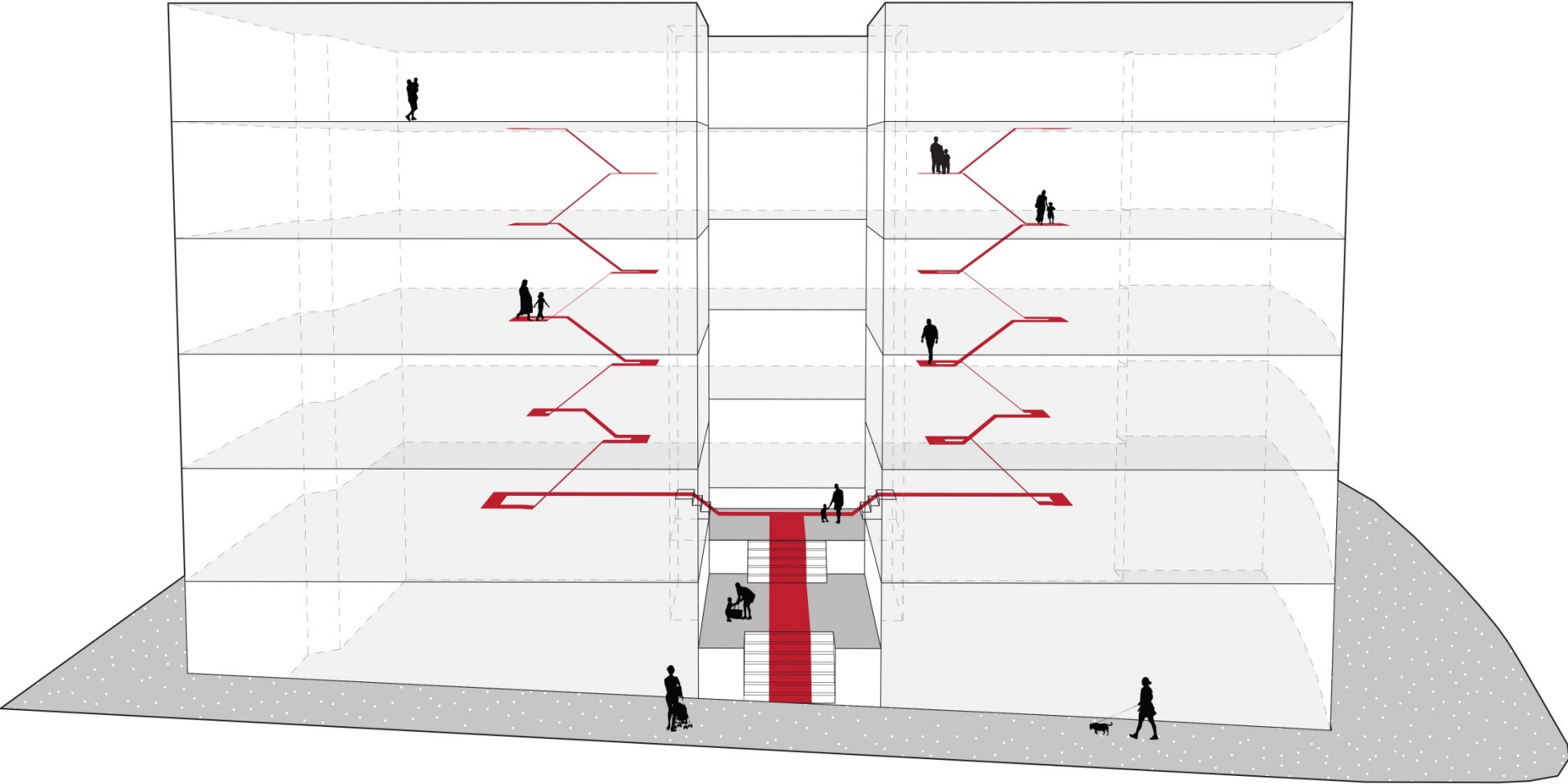
Wakefield Apartments

Existing entry on the left and
proposed entry on the right .

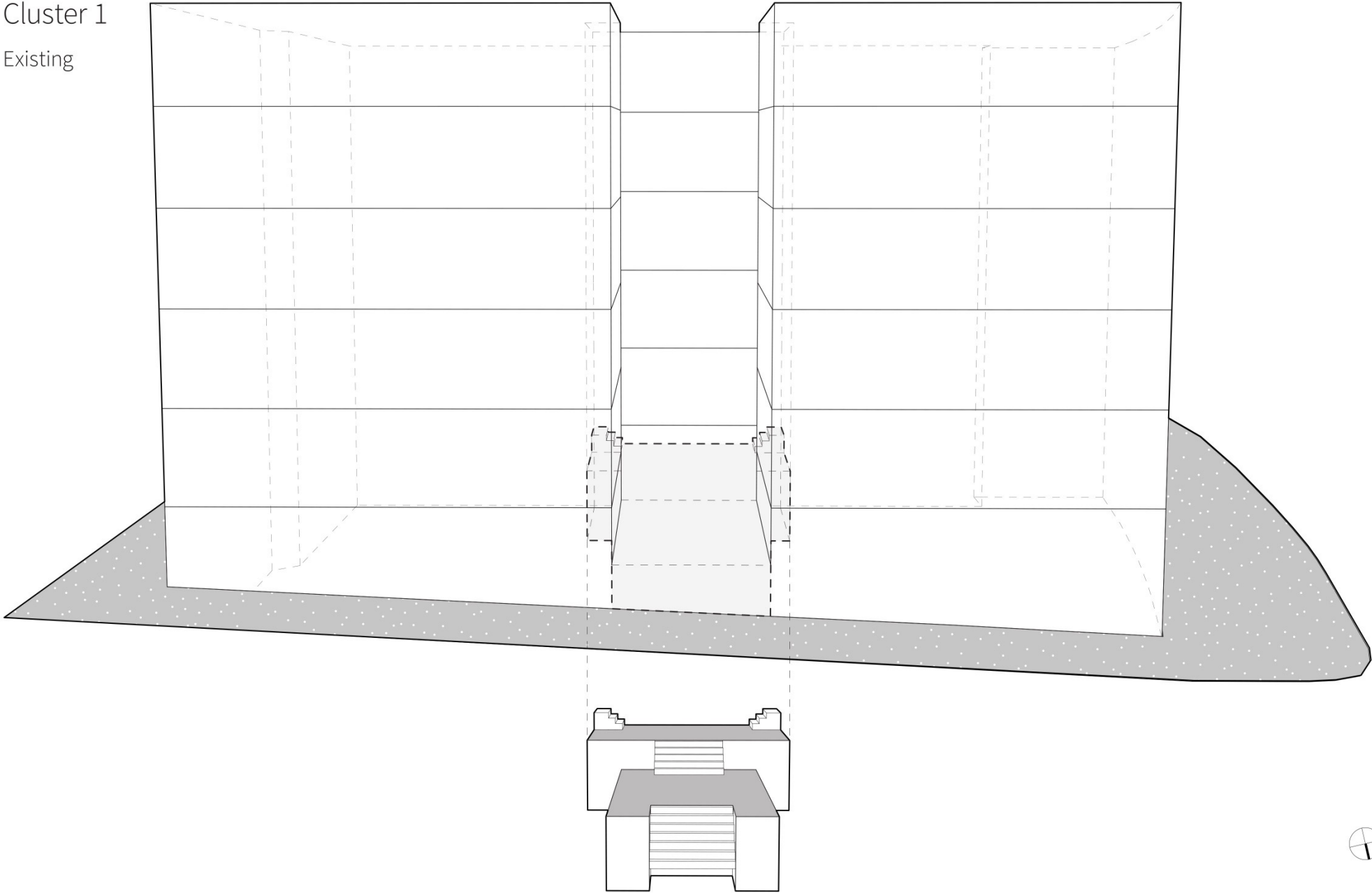


Cluster 1

Existing



Cluster 1
Existing



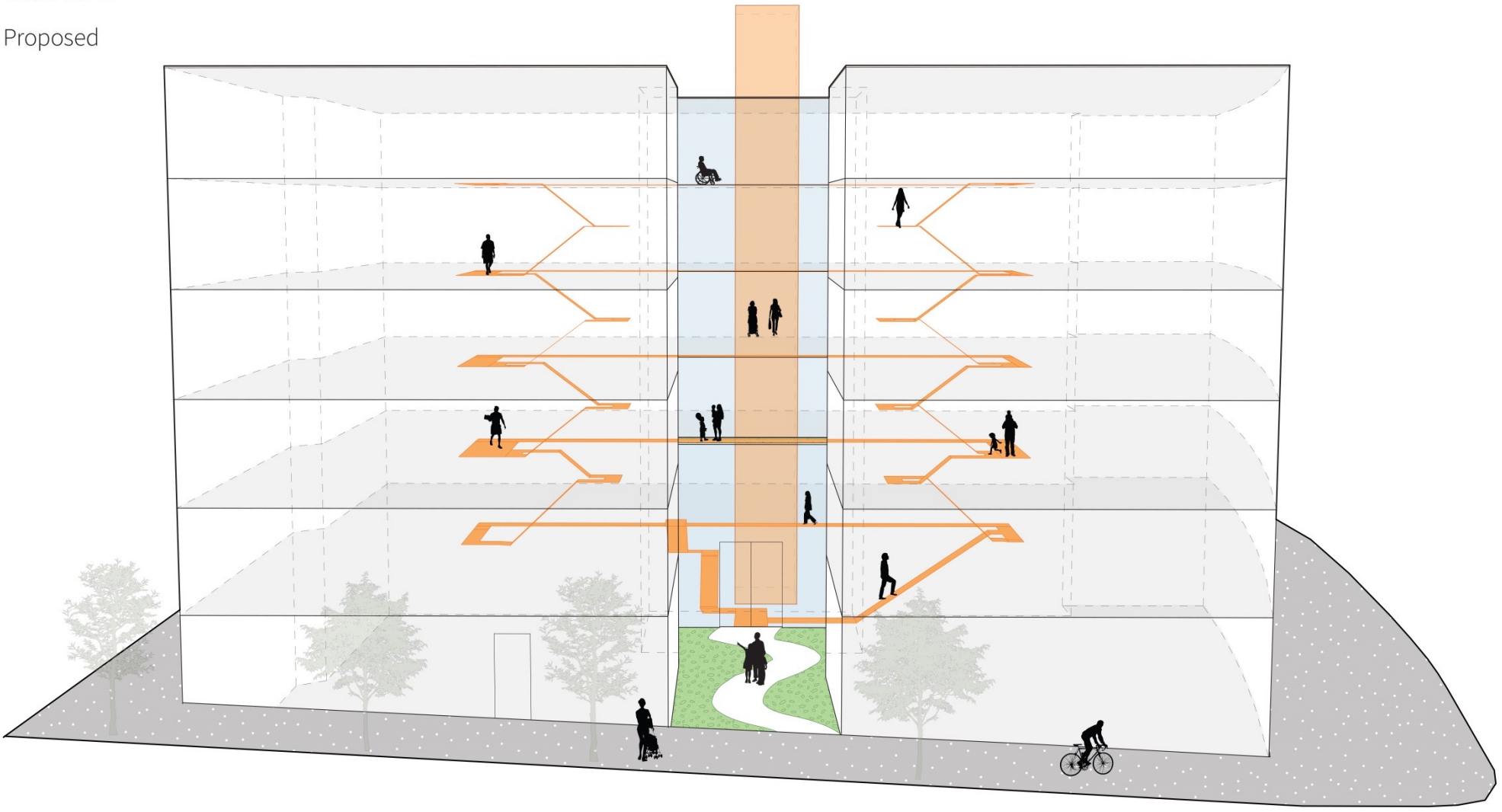
Cluster 1

Proposed



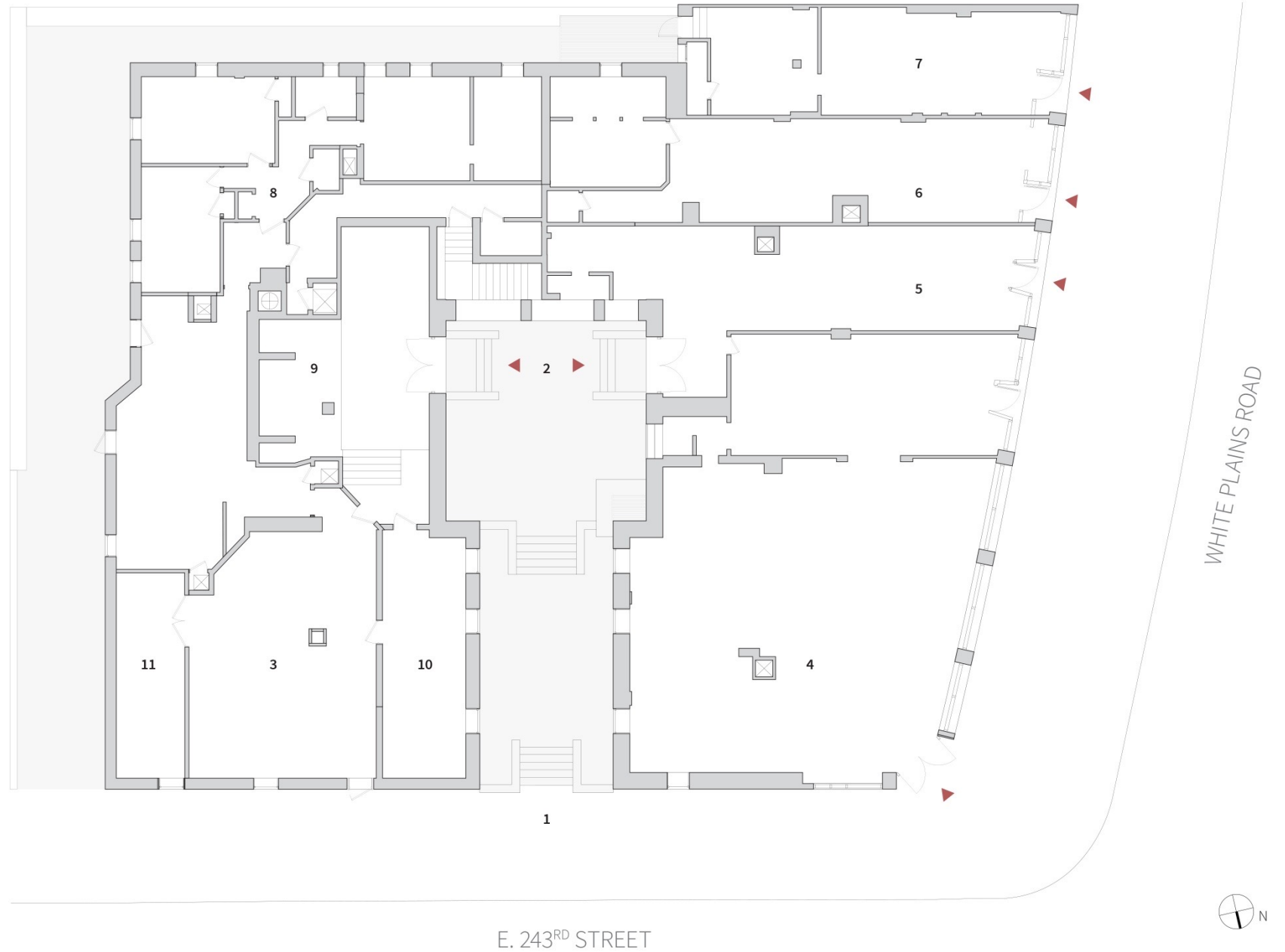
Cluster 1

Proposed



Existing Ground Floor

1. Entry Courtyard
2. Residential Entrances
3. Residential Utility & Storage Rooms
4. Retail 1
5. Retail 2
6. Retail 3
7. Retail 4
8. Super's Unit
9. Existing Fuel Oil Boiler Room
10. Existing Fuel Oil Tank Room
11. Existing Meter Room



WHITE PLAINS ROAD

E. 243RD STREET



Proposed Ground Floor

1. Residential Courtyard
2. Residential Entrance
3. Residential Lobby
4. New Elevator
5. Management Office
6. Laundry Room
7. Bike Room
8. Community Room
9. Existing Retail
10. Social Services Offices
11. Super's Unit
12. New Compactor Room
13. New Tank Room
14. New Electric Meter Room



WHITE PLAINS ROAD

E. 243RD STREET



Recommendations: Modeling and Testing/Monitoring

