

HPD DESIGN GUIDELINES

for PRESERVATION

MODERATE REHABILITATION

Version 1.01

Disclaimer

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The designer of record is responsible to ensure a project is designed in a manner to comply with the applicable laws, regulations, codes, and design standards including, but not limited to, those related to non-discrimination.

Special Thanks

This document is the product of internal evaluations and community feedback and would not have been possible without the help of numerous individuals and organizations. In particular, HPD would like to thank the New York City Accelerator (NYCA), the New York City Housing Authority (NYCHA), the New York City Housing Development Corporation (HDC), New York State Homes and Community Renewal (HCR) the New York State Energy Research & Development Authority (NYSERDA), New York State Association for Affordable Housing (NYSFAFH), Kinetic Communities Consulting, Taitem Engineering, Steven Winter Associates, and our key sister city agencies including the Mayor's Office of Climate and Environmental Justice (MOCEJ) and the Office of Management and Budget's Climate Programs and Policy Team (OMB).

Table of Contents

SECTION 1 / Classifications & Framework	6	CHAPTER 1	INTRODUCTION
SECTION 2 / Structure of the Guidelines	8		
SECTION 3 / Scoping HPD Preservation Projects	9		
SECTION 1 / Core Standards	14	CHAPTER 2	REQUIREMENT & REACH CRITERIA
SECTION 2 / Resiliency	16		
SECTION 3 / Heating, Ventilation, and Air Conditioning	21		
SECTION 4 / Envelope and Energy Efficiency	26		
SECTION 5 / Health and Wellness	29		
SECTION 6 / Accessibility and Age-friendly Design	34		
SECTION 7 / Broadband	37		
SECTION 8 / Building Operations	38		
APPENDIX A / Equipment Performance Standards	41	CHAPTER 3	APPENDICES
APPENDIX B / Electric Readiness & Path to Electrification	43		
APPENDIX C / Special Considerations for Heat Pumps & Billing	45		
APPENDIX D / Key Sustainability Laws	46		
APPENDIX E / Resources	48		

INTENTION OF THE DESIGN GUIDELINES

New York City is already experiencing the impacts of climate change, including higher temperatures, increased precipitation, and rising sea levels of more than a foot since 1900. These climate change hazards put residents and communities at risk – especially those in lower-quality housing. In addition, poor housing conditions diminish health outcomes and exacerbate longstanding health disparities in our city. Low-income households and communities of color have fewer options for high-quality, affordable housing and are most severely impacted by these health and safety risks.

New York City is committed to reducing carbon emissions to help mitigate the impacts of climate change. Buildings are the city's largest source of emissions and a critical sector that must be addressed to reach our goal of carbon neutrality by 2050. In 2016, New York City set an ambitious goal to reduce carbon emissions by 80% by 2050. In 2019, New York City passed the landmark Climate Mobilization Act that requires building owners to drastically reduce greenhouse gas emissions from building operations. This is backed by the State's Climate Leadership and Community Protection Act (CLCPA), which puts New York State on a path to achieve a clean grid by 2040 and reach economy-wide carbon neutrality by 2050.

The recently released *Housing our Neighbors: A New York City Blueprint for Housing and Homelessness* is Mayor Adams' comprehensive blueprint for tackling New York City's affordable housing crisis and getting New Yorkers into the safe, high-quality, affordable homes they deserve. HPD Design Guidelines for Preservation will help New York City achieve these goals and create healthier and more sustainable homes. In addition to reducing emissions, sustainable building design can reduce energy costs for residents, improve indoor air quality, and increase residents' health, safety and comfort.

The *HPD Design Guidelines for Preservation* is a policy document establishing a minimum design standard that ensures that all HPD projects can meet NYC's ambitious climate goals and laws while incorporating best practices for resiliency, health, and safety. Within the document, "Requirements" are mandatory, "Reach" indicates a preference or recommendation. Projects are encouraged, but not required, to achieve "Reach" criteria to the extent feasible.

HPD recognizes that the Design Guidelines cannot address all scenarios. Pertinent laws, rules, regulations, and codes take precedence over the Guidelines in the event of a conflict. When unique or special circumstances, extraordinary market conditions, or special community characteristics necessitate deviation from any aspect of the Guidelines, the development team must submit a request for a waiver and explain project constraints and the rationale behind design decisions. For efficiency, it may be necessary to schedule a preliminary Design Consultation meeting with representatives from HPD Program, the Sustainability Division, Building and Land Development Services (BLDS), and the development team.

PERIODIC UPDATES TO THE DESIGN GUIDELINES

Because NYC's sustainability laws and resources are fast-moving, HPD plans to:

- release Annual Criteria Updates as needed to reflect new laws, codes, and information
- release full Guideline Updates every 3-5 years, as needed
- issue summaries of regulatory changes

INTRODUCTION

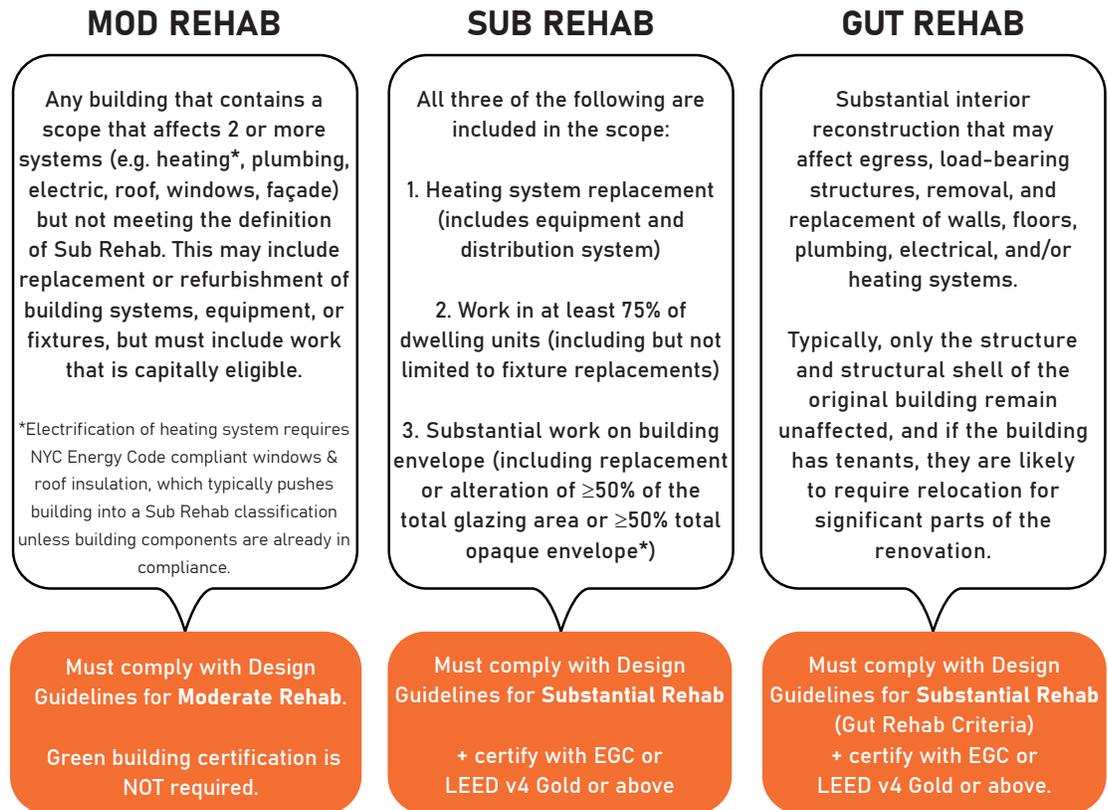
CHAPTER 1

SECTION 1 / CLASSIFICATIONS & FRAMEWORK

1.1 Rehab Classifications HPD's Rehab Classifications are based on Local Laws 31 and 32 of 2016, which require stringent green building design standards for city-funded capital projects defined in the law as "Substantial Rehabs." HPD considers Moderate Rehabs to be any building not meeting those thresholds and Gut Rehabs as projects with significantly more extensive scopes, where greater efficiency can be incorporated. Note that for accessibility or building code, different definitions may apply.

If a project is unclear about what Rehab Classification is applicable based on the project's needs or the Design Guidelines, a Design Consultation may be arranged.

Alert! Some scopes of work (e.g. electrification) will require an architect or engineer, and may change the Rehab Classification of the building from Mod Rehab to Sub Rehab, triggering compliance with EGC or LEED. Owners should be aware of this requirement and plan accordingly.



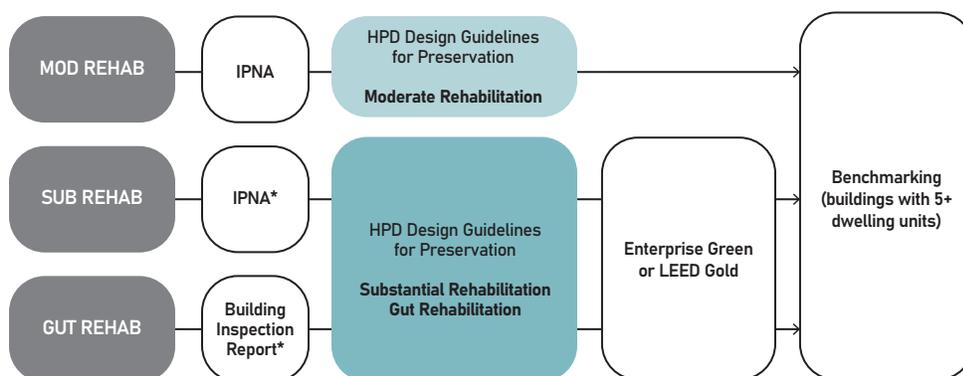
NOTES ON REHAB CLASSIFICATIONS

- For multi-building projects that include different Rehab Classifications, each building must meet the requirements per its designated classification. All buildings that are defined as Sub or Gut Rehabs are also required to certify with Enterprise Green Communities or LEED.
- Enterprise Green Communities uses different definitions of Substantial and Moderate Rehabs internally. HPD Sub Rehabs pursuing EGC that meet EGC's definition of "Moderate Rehab" may follow the slightly less stringent Moderate Rehab Pathway of EGC. See Enterprise Green Criteria & Certification Appendix A for definitions and instructions.

Note that work in kitchens or bathrooms, and changes to layouts or door openings may affect accessibility requirements.

- NYC Codes use different Rehab definitions for work in existing buildings. Please refer to the New York City Energy Conservation Code to confirm that the projects meets the appropriate requirements of the code and is designed accordingly.
- For accessibility, various standards may apply to each project depending on the scope of work. Please refer to *Uniform Federal Accessibility Standards (UFAS), 2010 ADA Standard For Accessible Design (ADA)* and *Fair Housing Act Design Manual 1998 (FHA)* for further information. *HPD Accessibility Guide* provides an overview of applicable accessibility regulations for preservation projects.
- 1-4 family buildings are strongly encouraged to comply with the applicable criteria in the guidelines to the extent feasible. In addition, all units designed for homeownership projects (whether the unit itself is owner’s unit or is a rental unit in a homeownership building) are encouraged to include the necessary infrastructure and hook-ups for dishwashers and clothing washers and dryers either in the units or the buildings whenever feasible, and in accordance with any additional HPD program requirements. All units should also incorporate finishes that are in line with comparable market homeownership units, including counter tops and appliances, to the extent feasible.
- A consultant (e.g. a licensed design professional) is required for all Sub/Gut Rehabs and for any Mod Rehab that includes work in kitchens and bathrooms, changes to layouts or egress, work on any major system including structural, envelope, mechanical, electrical, and plumbing—including all heating system replacements—or any other work that will require filing with the Department of Buildings.

1.2 HPD’s Sustainability Framework HPD’s sustainability framework for rehabs ensures that all HPD Preservation projects can meet NYC’s ambitious climate goals and laws while incorporating best practices for resiliency, health, accessibility, and safety that are appropriate for the different Rehab Classifications of HPD projects. The framework includes the different requirements, including the design guidelines that apply to HPD projects, based on Rehab Classification.



*For projects that involve replacement of most major mechanical, electrical, and plumbing systems, a Building Inspection Report may be used in lieu of an IPNA

SECTION 2 / STRUCTURE OF THE GUIDELINES

Each section in Chapter II addresses a specific set of goals or standards that HPD has established as a baseline for projects to meet. These are referred to as Requirements. Each section also contains “Reach” criteria which all development teams are encouraged to meet, as they represent best practices and set a precedent for future baseline standards. Note that certain Requirements may be waived by HPD if they are demonstrated to be infeasible.

2.1 Requirement vs. Reach At a minimum, all projects must comply with the requirements for their project type or Rehab Classification. However, projects are encouraged to explore the feasibility of the “Reach” goals, as they set a precedent for future Requirements:

Requirements are mandatory for all projects. In some cases, there are different requirements for different Rehab Classifications or unique populations.

Reach criteria are optional but represent best practices for the specific criteria area. These criteria may become mandatory in the future. Projects may choose individual Reach criteria or follow a Reach Third-Party Certification, which covers many criteria.

2.2 Design Waivers Certain deviations from the baseline requirements will be considered via a Design Waiver Request if necessary to avoid costly structural changes or tenant hardship or if they result in a superior design solution. Evaluations of waiver requests will include the determinations of the appropriateness of the proposed alternative(s). Waiver requests will be reviewed on a case-by-case basis and determinations will be based on the degree of:

- technical infeasibility
- financial infeasibility - including cost-effectiveness, availability of incentives, impacts on operating costs, or if criteria would cause project to be reclassified (e.g. a Mod Rehab to a Sub Rehab where project cannot support the additional costs)
- impact on the residents, including whether it would result in higher tenant-borne utility costs or would require tenant relocation during construction that is not otherwise required
- inability of the system to comply with HPD's Electric Heating Policies

All waiver requests must be submitted via the Design Waiver Request Form for review and determination by HPD prior to developing Scope of Work. A Design Consultation with HPD may be arranged to discuss waiver requests. The Design Waiver Request Form includes submission requirements and can be obtained on HPD's [Preservation Design Guidelines](#) webpage.

Every time you see an orange bubble, it will signify that a Design Waiver is available! Design Waivers must be approved by HPD prior to developing the Scope of Work.

SECTION 3 / SCOPING HPD PRESERVATION PROJECTS

HPD's Sustainability Scoping Process is designed to ensure that the holistic needs of a property are assessed. This includes addressing physical deficiencies (accessibility), energy use, and carbon emissions, as well as occupant health and safety. Additionally, it is critical to design for tomorrow: all buildings should take the City's long-term decarbonization goals and laws into account when scoping a project.

By leveraging the information in the Integrated Physical Needs Assessment (IPNA) and the criteria in Design Guidelines, projects can and should scope projects to meet the City's long-term decarbonization goals and consider the project as part of a long-term capital plan to meet these goals. In addition to Local Law 97, projects should consider adjacent laws like the Façade Inspection & Safety Program (FISP), Local Law 152 (gas piping inspections), and Local Law 87 as opportunities to streamline compliance and achieve multiple goals simultaneously. Additionally, projects should consider energy cost savings, non-energy benefits like occupant health, and long-term resiliency and risk when making decisions about capital upgrades.

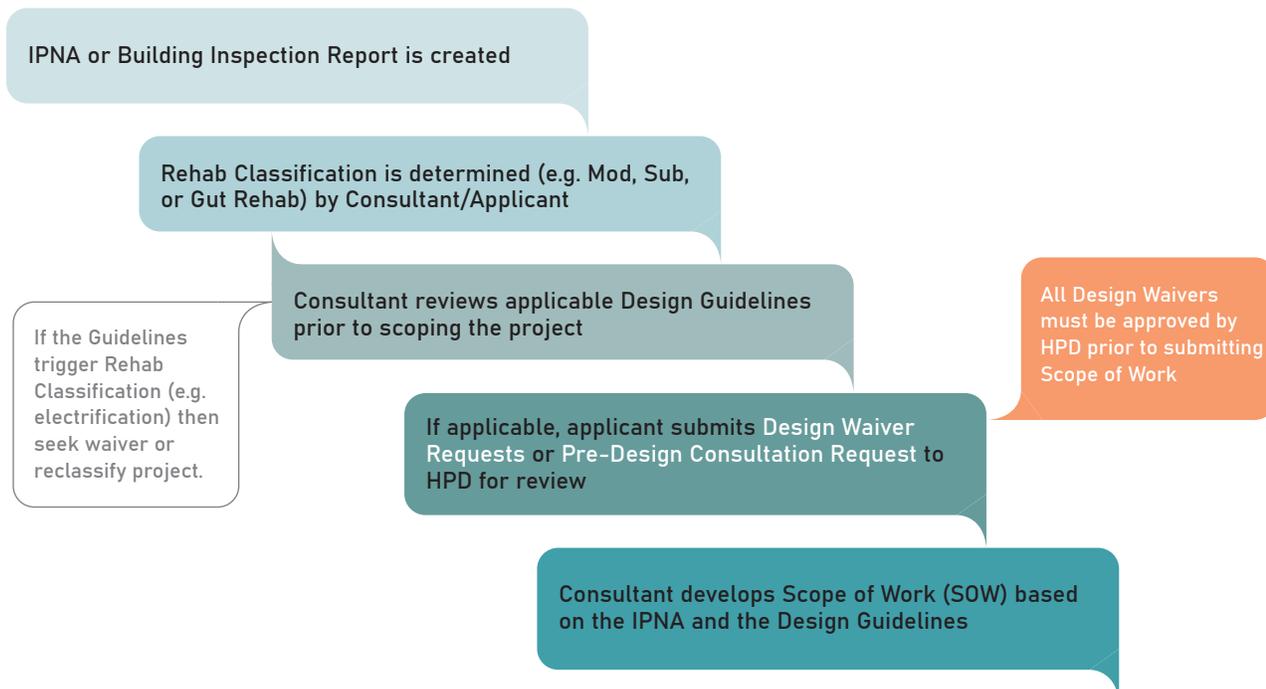
A project is scoped based on the recommendations outlined in the IPNA plus, at minimum, all mandatory Requirements of the HPD Design Guidelines and, for Sub and Gut Rehabs, third-party green building standards. In addition, projects will be required to offset costs to the extent possible by seeking all available incentives and underwriting energy savings.

3.1 The HPD Scoping Process The process can vary depending on whether there is an outside lender. Note that for teams new to HPD, or wishing to discuss a Design Waiver, a Design Consultation can be arranged upon request.

Note that in no case may the Guidelines or other requirements override NYC codes and standards; however, in cases where one requirement is more stringent, the more stringent requirement must be followed.

All projects in TPT and PLP programs, and all projects if scope of work involves ground disturbance require a Phase 1 Environmental Assessment. All other projects must comply with applicable environmental assessment requirements for each HPD program. Further information can be found at HPD Environmental Review Webpage.

HPD's Master Guide Specifications for Rehabilitation Projects are available to help architects, engineers, and contractors with specifications.



3.2 The Integrated Physical Needs Assessment (IPNA) is a property evaluation tool that integrates an evaluation of energy, water, and health needs into a full roof-to-cellar assessment of a property's physical conditions to ensure the holistic needs of the property are addressed. All projects must work with a pre-qualified provider to complete an IPNA.

Note: For projects that have an older IPNA that pre-dates 2023 and does not include the LL97 Compliance Tab or the Resiliency Tab, these tabs must be included as standalone items along with the older IPNA and can be found on the NYSERDA IPNA webpage.

a. The IPNA:

- Must be less than 2 years old at the point of application to HPD
- Includes the following critical sections:
 - Local Law 97 Compliance Tab
 - Resiliency Screening Tab
 - Solar Feasibility Analysis

b. The following items from the IPNA must be included in the project's scope:

- Items noted in the IPNA that correct physical deficiencies and significantly lower energy and water cost.
- Items noted in the IPNA as being in "poor condition" and/or items noted as "unsafe" must be replaced. In addition, systems, components, and finishes with Remaining Useful Life (RUL) of < 15 years should be replaced based on the following criteria:
 - Systems, components, and finishes that are classified as "immediate needs" or with a RUL of 5 years or less must be replaced as part of the project scope.
 - Systems, components, and finishes with a RUL of 5-10 years should consider replacing items unless they are (or can be repaired to be) in good working order, meet the efficiencies required in Appendix A where applicable, and/or are such that item could easily be replaced using reserve funding.
 - Systems or components with a RUL greater than 10 years may be replaced with building reserves if sufficient reserves are available when replacements are anticipated.

c. Local Law 97 Compliance: Buildings, especially those subject to Article 320.3.9 ("The 2035 Pathway") should scope projects to comply with longer term LL97 emissions limits. However, buildings not replacing major systems should ensure that the building is designed and building reserves are funded so that the building may comply with the law at a future date.

Projects are strongly encouraged to consider how to best leverage upcoming compliance needs to create forward-looking, integrated scopes (e.g., consider how upcoming Gas Line Repairs or long-term Local Law 97 requirements could affect decisions about electrification).

3.3 Determining the Applicable Rehab Classification Based on the project's needs as outlined in the IPNA, determine whether the project would be classified as a Mod, Sub or Gut Rehab. See Section 1 "HPD's Rehab Classification" for details.

- Note that in certain cases, compliance with a Requirement or Reach criteria in the Design Guidelines would cause the project to be reclassified (e.g. from a Mod Rehab to a Sub Rehab due to an electrification requirement).
- Projects should take this into consideration when scoping the project and either seek a waiver or design to the appropriate Rehab Classification.

3.4 Design Guidelines As discussed in Section 2, "Structure of the Guidelines" all projects must, at minimum, comply with the baseline requirements for their project type or Rehab Classification as outlined in the applicable Design Guidelines. In addition, projects are encouraged to incorporate optional Reach criteria, although they are not required.

3.5 Design Guidelines Checklist As part of the submission package for HPD, all projects will be required to submit a Design Guidelines Checklist signed by the owner/ developer and architect of record to demonstrate that all Requirements will be addressed and note which Reach criteria are included. The checklist and instructions for submitting can be found here: [HPD's Preservation Design Guidelines](#).

- The checklist also includes a Project Summary tab, which must be submitted along with the checklist. The Project Summary summarizes the key features of the building, and will help HPD better track the performance of our portfolio. This replaces the BLDS Project Summary previously used for Sub Rehabs.
- The checklist allows applicants to note whether a Design Waiver has been approved by HPD. All Design Waivers must be submitted/approved prior to submitting a Scope of Work. See next section.

3.6 Design Waivers In some cases, as noted in Section 2 "Design Waivers," a project may seek a waiver from a Requirement due to technical or financial infeasibility, including if the requirement would result in a superior design or would cause the project to be reclassified (e.g., a Mod Rehab being reclassified as a Sub Rehab due to an electrification requirement, or a scope item that would require tenant relocation that would not otherwise be required).

- Design waiver requests must be submitted via the Design Waiver Request Form and must be approved by HPD prior to submitting the project's Scope of Work. The Design Waiver Request Form can be obtained on [HPD's Preservation Design Guidelines](#).

Electrification of heating systems requires envelope work, which may change the classification of a Mod Rehab to Sub Rehab. In addition, electrification projects must comply with HPD's Electric Heating Policy. Applicants must consider whether electrification is feasible or if the project should seek a waiver.

Every time you see an orange bubble, it will signify that a Design Waiver is available! Design Waivers must be approved by HPD prior to developing Scope of Work.

Information about HPD's Resilient & Equitable Decarbonization Initiative (REDi) funding programs can be found [here](#).

3.7 Offsetting Costs All projects will be required to seek all available incentives and outside funding sources, and underwrite energy savings to reduce the need for city subsidies. In addition, projects with HPD-only financing should consider how to ensure that non-capitally eligible items may be incorporated into the project scope.

- a. **Pilots:** HPD's Retrofit Electrification Pilot offers up to \$1 million in gap funding to HPD Preservation projects seeking to electrify heating and/or hot water systems. Projects meeting the pilot's Program Requirements are strongly encouraged to apply. The Program's Webpage has instructions to apply to the program.
- b. **Incentive Programs:** The Guidelines were designed to align with the requirements of various utility incentive programs to ensure that all projects qualify for incentives.
- c. **Underwriting Energy Savings:** Projects will be required to underwrite a percentage of projected energy savings as a way to offset city subsidy.
- d. **Capital Eligibility:** Certain standalone items are not capitally eligible unless paired with another eligible item. To the extent feasible on HPD-only projects, pair items such as air-sealing with window replacements, fixture replacements with plumbing work, electric appliances with electrical upgrades, etc. Note that utility incentives cover some of these items regardless of capital eligibility.

REQUIREMENT & REACH CRITERIA

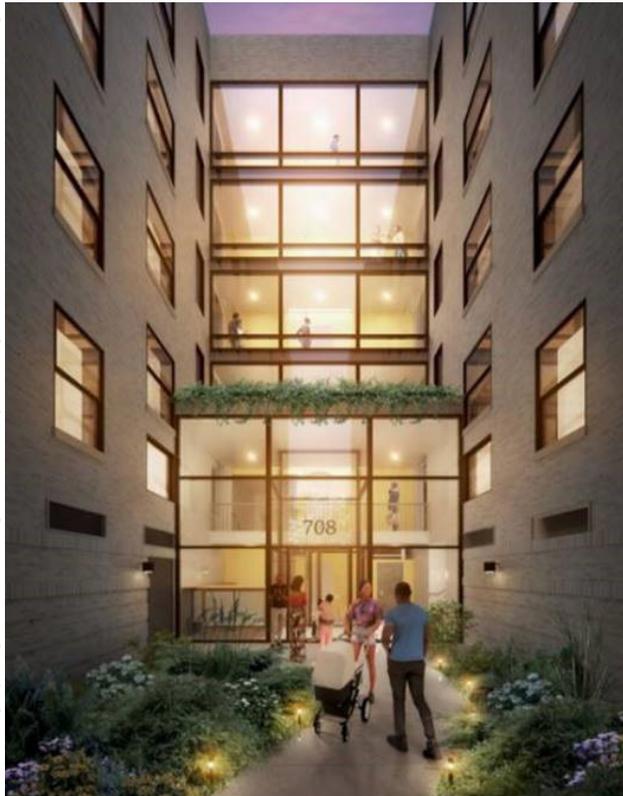
CHAPTER 2

SECTION 1 / CORE STANDARDS

All projects must comply with this section to ensure that HPD projects are on a path to meet NYC's ambitious climate goals and laws, including Local Law 97 and Local Laws 31/32. To achieve this, HPD is focusing on carbon emissions reduction and beneficial electrification – electrification where it makes the most economic sense and provides the most benefits.

Note that electric heating and hot water systems must comply with HPD's *Electric Heating Policy*, which ensures that efficient systems are encouraged, poorly performing systems are not allowed, and tenants are protected, and HPD's *Resident-Paid Heat Policy* which outlines the very restrictive conditions under which heating may be paid for by building residents.

Rendering by Nightnurse Images courtesy of Magnusson Architecture and Planning



1.1 GREEN BUILDING STANDARD

REQUIREMENTS Third Party certification is not required for Moderate Rehabs.

REACH Design & Certify building with Enterprise Green Communities.

1.2 GREENHOUSE GAS EMISSIONS

REQUIREMENTS All projects must submit an LL97 Compliance Tab from the IPNA demonstrating how subject buildings will meet the appropriate LL97 compliance requirements.

- For buildings subject to Article 321 (The Prescriptive Pathway), buildings may choose to implement all applicable Prescriptive Energy Conservation Measures, but HPD strongly encourages buildings to be designed to meet or exceed the 2030 GHG emissions limits.
- For buildings subject to Article 320.3.9 (The 2035 Pathway), design should meet or exceed the 2035 GHG emissions limits by 2035 and have the ability to meet future limits within the project's financing cycle (e.g. using reserve funding).

REACH Design project to meet longer-term Local Law 97 GHG emissions limits than are required. This is especially important for buildings subject to the 2035 Pathway who will be required to meet subsequent limits in 2040, 2045, and 2050.

1.3 ENERGY USE REDUCTIONS

REQUIREMENTS Certain HPD programs, including the Green Housing Preservation Program (GHPP) require buildings to reduce energy use by 20%.

REACH Achieve a minimum of 20% energy use reduction in ALL buildings.

1.4 ELECTRIFICATION*

REQUIREMENTS Electrification is required for heating and hot water on certain projects that are currently using oil or electric resistance for heating, or where equipment is located in basements or cellars in flood-prone buildings (as defined in Chapter 2, Section 2) as a means to protect equipment from flooding.* Further details can be found in Sections 3.1 and 3.4.

REACH Design the building to be “Electric Ready” or create a “Path to Electrification” for the project that aligns with the expected lifespan of equipment and the project's refinancing cycle. If necessary, size reserves to accommodate mid-cycle upgrades. See Appendix B for guidance on Electric Readiness.

*System-based waivers are available if the utility cannot provide adequate electrical service, the electrification of a system is technically or financially infeasible, including if electrification would trigger reclassification of project to Sub Rehab or tenant relocation, and the project is unable to support these costs.

Note that electric heating systems must comply with HPD's Electric Heating Policies.

SECTION 2 / RESILIENCY

All buildings and rehab typologies are required to comply with this section to support resilient homes and communities and to address the key climate risks facing New York City —increasing heat and flooding due to rainfall and sea-level rise (SLR). The 2022 Integrated Physical Needs Assessment (IPNA) now includes a mandatory Resiliency Screening Tab, projects should refer to that tab to identify flood-prone properties.

For the purposes of this document, “flood-prone” is defined as a project meeting any of the conditions below:

- Sites defined as being within the Preliminary Flood Insurance Rate Map 2015 Special Flood Hazard Area (includes both the 1% and 0.2% annual chance floodplain)
- Sites defined as being within the 2050s 1% annual chance coastal floodplain per NYC’s Flood Hazard Mapper
- Sites that are shown as adjacent to flooded areas in the extreme stormwater flooding (100-year storm with 2080s SLR) scenario in the NYC Stormwater Flood Map
- Sites with a known history of flooding from high tides or heavy rainfall, based on institutional knowledge, history of 311 service requests, or qualifies as a “Repetitive Loss” property by FEMA



2.1 RESILIENCY RISK SCREENING

- a. All projects must submit a completed Resiliency Worksheet as part of the IPNA process. If project has an IPNA that pre-dates the 2022 IPNA release, submit a standalone Resiliency Tab which can be found on [NYSERDA's IPNA webpage](#). Reference the Flood & Heat Hazard Exposure tab of the IPNA tool for further guidance to help identify the appropriate Design Flood Elevation (DFE) for projects in flood-prone areas.

2.2 FLOODING & STORMWATER

- a. Comply with DEP's Unified Stormwater Rules, which require Stormwater Construction Permits for projects that disturb 20,000 sf or more of soil or create 5,000 sf or more new impervious surface.
- b*. For current or future coastal flood-prone sites, elevate all new critical equipment above the 2050s sea-level-rise-adjusted Design Flood Elevation (SLR-adjusted DFE).
- c*. For stormwater flood-prone sites, elevate all new critical equipment out of any subgrade space to grade or higher.

As stormwater depths can vary, projects are encouraged to design for flash flood depths where can be determined by a qualified engineer.

- d. For any new critical equipment that cannot be fully elevated, encapsulate and/or dry flood-proof equipment to the maximum extent feasible.
- e. New residential units may not be constructed below the 2050s SLR-adjusted DFE or below grade.
- f. Install backwater valves with containment tanks and/or ejector pumps in the lowest level of the building when scope includes installation of new sanitary, stormwater or other plumbing systems.
- g. When replacing finishes in flood-prone spaces (e.g. spaces below the SLR-adjusted DFE or below grade), use flood-resistant construction and materials that can withstand flooding.
- h. Where applicable, install flood vents.
- i. All new paving or hardscaping must be open-grid or permeable pavement and be sloped away from the building. To the extent possible, minimize paved surfaces in favor of native species/drought-tolerant planted areas.

REQUIREMENTS

Design Waivers are available for items b. & c. if equipment cannot be elevated or flood-proofed, if project can demonstrate technical or financial infeasibility, or if requirement would trigger reclassification. Design Waivers must be submitted and approved by HPD prior to developing Scope of Work.

REQUIREMENTS FOR FLOOD-PRONE BUILDINGS

Note that "critical equipment" refers to HVAC, electrical switchgear, fire pumps and sump pumps, emergency panels and generators, emergency communications, and fire alarm equipment. HPD may use its discretion to advise resiliency measures for other building utilities based on the available project, site and climate hazard information.

REQUIREMENTS
FOR FLOOD-PRONE BUILDINGS

- i. Provide permanent signage in buildings and flood disclosure information on tenant leases notifying tenants of potential flood risk and provide resources to residents, including encouraging them to enroll in **NotifyNYC** and creating an emergency plan.
- j. Procure flood insurance for the property.
- k. Note that projects must also comply with Appendix G where applicable.

REACH CRITERIA FOR
FLOOD-PRONE BUILDINGS

- a. Install flood sensors in all below-grade residential units and in any spaces where flooding is possible.
- b. Relocate any existing residential units that located below elevation requirements established Section 2.2b.
- c. Remove unnecessary paving and replace with pervious materials or native species/ drought-tolerant planted areas.
- d. Additional measures can be found in Table 4 of the **Climate Resiliency Design Guidelines**.

2.3 EXTREME HEAT

- a. For Rehabs that do not include air conditioning: Provide dedicated outlet and circuit to enable air conditioning in every habitable room in each dwelling unit.
 - b. For Senior Housing (buildings containing >50% seniors) and all dedicated Senior Dwelling Units: Provide ENERGY STAR rated air conditioner to all habitable rooms in each dwelling unit. For window or wall air conditioners, unit must be installed in a tightly fitting surround, air-sealed, and provided with seasonal covers or winter storage of units at the request of residents.
 - c. For buildings without in-unit air conditioning that include or can accommodate a common or community space: Provide air conditioning (ENERGY STAR or equivalent) and ensure that the space can be accessed by residents during heat waves. If possible, provide emergency backup power to the space (see 2.4). This is particularly critical for buildings in high-heat neighborhoods or that contain low-mobility populations.
 - d. Install a cool roof.
 - e. Minimize new hardscaping in favor of native species/drought-tolerant planted areas or open grid pavement.
-
- a. For all buildings, but particularly buildings in districts that have a score of 4 or 5 per the NYC Department of Health's Heating Vulnerability Index, provide highly efficient (ENERGY STAR) air conditioning to at least one habitable room in each dwelling unit.
 - b. For all buildings where outdoor space is available, provide a shaded outdoor space that can be accessed by residents during heat waves. This is particularly critical for buildings in high heat neighborhoods or that contain low-mobility populations.
 - c. Remove unnecessary hardscaping and replace with trees, planted areas and/or green roofs to reduce heat island effect around building, using native or drought-tolerant plantings.
 - d. Provide ceiling fans.
 - e. Provide interior/exterior window shades or blinds with light-colored or reflective backing at each window.
 - f. Allow residents without children under the age of 10 the option of removing window limiters to increase airflow.
 - g. Design HVAC systems based on forward-looking climate data, per the NYC Climate Resiliency Design Guidelines.
 - h. Additional strategies can be found in Appendix 4 of the Climate Resiliency Design Guidelines.

Heat waves are one of the leading causes of death among seniors in the United State, and communities of color are especially vulnerable.

2.4 BACKUP POWER AND PASSIVE SURVIVABILITY

REACH

- a. Provide backup power generation to critical building loads including any of the following: egress lighting, common area electrical outlets for phone charging, building-wide broadband, and one elevator in every building over 125' in height.

Note that backup power generation may be provided by an efficient, low-emission generator, a solar energy system with battery storage, or an emergency panel that can easily and safely connect to a mobile generator during emergencies.

- b. Provide a "Place of Refuge" with 15 sf per bedroom (or to the extent that the current building configuration allows) and include adequate backup power generation to heating, cooling, lighting, outlets, at least one refrigerator, and at least one accessible bathroom with a potable water source. Ensure that the space has natural ventilation and lighting, regardless of Rehab Classification or population.
- c. Design buildings to maximize the residents' ability to "shelter in place" by providing natural ventilation, natural light, and building envelopes that can retain temperatures at safe levels.

SECTION 3 / HEATING, VENTILATION & AIR CONDITIONING

Highly efficient HVAC systems contribute to the comfort and safety of residents while reducing energy use and putting buildings on a path to meet NYC's ambitious climate goals and laws, including Local Law 97. This includes focusing on beneficial electrification —electrifying heating and hot water where it makes the most economic sense and has the most benefits. HPD's Design Guidelines focus on system-wide HVAC upgrades for Substantial and Gut Rehabs, where more intensive scopes can be accommodated. Moderate Rehabs, except for strategic electrification of the worst-performing heating and hot water systems, primarily focus on system maintenance and equipment-only upgrades to optimize building performance and enable buildings to meet Local Law 97's Prescriptive Requirements where applicable.

Note that electric heating and hot water systems must comply with HPD's Electric Heating Policy which ensures that efficient systems are encouraged, poorly performing systems are not allowed, and tenants are protected. Electrification of space heating must be done in conjunction with envelope upgrades or in buildings where envelopes meet the baseline requirements of these Guidelines. HPD's Resident-Paid Heat Policy outlines the very restrictive conditions under which heating may be paid for by building residents.

3.1 HEATING SYSTEMS

- a*. The following equipment must be converted to high-performance electric heat pumps, meeting the performance standards outlined in Appendix A:
 - Heating systems that use oil or electric resistance as a primary heating fuel* or are located in basements and cellars in flood-prone buildings AND where project scope includes roof insulation and window replacements (or where these items already meet current NYCECC requirements for U-value and SHGC).
- b. Heating systems and equipment that are being replaced but not required to be electric:
 - Must reduce energy use by at least 10% and meet or exceed the efficiencies and performance standards in Appendix A.
 - Must eliminate oil use as a primary or secondary source of fuel.
 - New boilers must be right-sized using a Cold-Start or Equivalent Direct Radiation (EDR) method, include modulating linkage-less burners, and meet the efficiencies required in Appendix A. Note that buildings are strongly encouraged to decouple Domestic Hot Water from space heating to enable system right-sizing.
- c. Heating systems and equipment that do not require replacement must:
 - Be repaired/upgraded to meet the efficiencies and performance standards in Appendix A.
 - Balance the system, ensure pumps are correctly sized and install pressure-independent control valves at each terminal unit to provide both temperature and flow control.
 - Implement all applicable Prescriptive Energy Conservation Measures (PECMs) listed below: (Note that these measures will satisfy the LL97 PECM pathway)
 - Adjust temperature set points to reflect appropriate space occupancy and facility requirements.
 - Repair all visible and accessible heating system leaks.
 - Perform heating system maintenance, including but not limited to ensuring that system component parts are clean and in good operating condition. Refer to the [AMEEP Program Manual](#) for details and associated incentives for this measure.
 - Insulate all new and exposed heating/hot water piping and uninsulated service hot water tanks to current NYCECC requirements or the extent that space allows.
 - Install indoor and outdoor heating system sensors and boiler controls. Sensors must be installed in a minimum of 25% of apartments on various floors and at the end of each branch line and must allow remote access and web-based monitoring.
 - Install or upgrade master venting at the ends of all supply mains, large horizontal pipes, vertical pipes, and tops of risers.
 - Replace or repair all steam traps such that all are in working order. Steam traps are not required at 2-pipe steam heaters equipped with correctly sized orifice plates.

*System-based waivers are available for electrification of a system if utility cannot provide adequate electrical service; if system is technically or financially infeasible, including if the electrification of Sub Rehab would trigger tenant-relocation and project is unable to support these costs.

Alert! Electrification of heating systems may change the classification of the building from Mod Rehab to Sub Rehab and trigger a Third-Party Certification requirement and will require a design professional to file the project. Owners should be aware of this requirement and plan accordingly.

- a. Design the building to be “Electric Ready” or create a “Path to Electrification” for the project that aligns with the systems’ expected lifespan and refinancing cycle. If necessary, size reserves to accommodate mid-cycle upgrades. See Appendix B for guidance.
- b. Use higher-than-baseline equipment efficiencies.

3.2 COOLING

- a. See Section 2.3: Extreme Heat for requirements specific to certain project types and populations.
- b. All air conditioning must meet the efficiency criteria in Appendix A or, for window or wall air conditioners, the unit must be ENERGY STAR rated or equivalent, and installed in a tightly fitting surround, air-sealed, and provided with seasonal covers or winter storage of units at the request of residents.

3.3 THERMOSTATS AND CONTROLS

- a. Ensure that every apartment has individual temperature controls for each heating/cooling system:
 - 1-pipe steam systems: N/A
 - 2-pipe systems: install TRVs and orifice plates in 70% of apartments and all common areas.
 - Steam systems: install insulated smart thermostatic radiator enclosures with temperature controls.
 - Hydronic Systems: Install a controller with outdoor temperature reset and warm weather shut-down capability. For hydronic systems with fan-powered heaters, install electric thermostats connected to the fan. For hydronic systems that can support zone control, install zone control (zone valves or zone pumps, each with a thermostat) for each zone (typically apartment), or thermostatic valves on each radiator.
 - Heat Pump Systems:
 - Each apartment shall be treated as an individual heating zone controlled by an easy-to-read wall-mounted (or in the case of Room Heat Pumps, controls may be on the unit) 7-day programmable thermostat with the ability to program night-time setbacks and set-point limits as allowed by code.
 - Preset all units with reasonable and code-compliant typical heating & cooling temperatures. For example:

Note that this measure will satisfy the requirements of Local Law 97’s Prescriptive Energy Conservation Measures pathway.

Heating: 70 degrees daytime and 66 degrees night-time. Minimum temperatures during heating season must comply, at minimum, with NYC’s Heat Laws
Cooling: 74 degrees occupied, and 80 degrees when away

REQUIREMENTS

- Present maximum/minimum limits to prevent overuse, typically 74 degrees maximum for heating (may be higher for seniors) and 72 degrees minimum for cooling.
- Provide easy-to-read instructions for residents about basic equipment and thermostat functions, including override, “away” mode, and energy savings.

For central HVAC systems, provide control capabilities of equipment and set-points through BACnet infrastructure or equal.

REACH

- Provide control capabilities of all equipment and set-points through BACnet infrastructure or equal.
- Provide controls that enable tenants and building owners to participate in demand response programs.
- Provide easily accessible videos for tenants about system and thermostat use.

3.4 DOMESTIC HOT WATER SYSTEM

REQUIREMENTS

- All Domestic Hot Water (DHW) systems being replaced in buildings < 7 stories currently using oil or electric resistance as a primary heating source, or where equipment is located in the basement or cellar in a flood-prone area, must be replaced with a high-performance electric DHW system meeting the performance standards outlined in Appendix A.
- DHW systems being replaced but not requiring electrification must be replaced with high-performance non-electric DHW systems meeting the performance standards outlined in Appendix A.
- For DHW systems that are not being replaced, perform heating system maintenance, including but not limited to ensuring that system component parts are clean and in good operating condition. Refer to the AMEEP Program Manual for details.
- Insulate all new and accessible uninsulated heating/hot water piping and uninsulated service hot water tanks to current NYCECC requirements.

REACH

- Incorporate wastewater or drain-water heat recovery or ground source heat pumps into a project to the extent feasible.
- To the extent feasible, decouple all DHW systems that are part of building heating systems and replace them with a high-performance DHW system meeting the performance standards outlined in Appendix A.

*System-based waivers available for electrification of a system if utility cannot provide adequate electrical service or if system is technically or financially infeasible.

Note that electric DHW systems must comply with HPD’s Electric Heating Policies.

Items c. & d. will satisfy the requirements of Local Law 97’s PECM pathway.

3.5 VENTILATION

- a. For buildings with existing mechanical ventilation: clean/seal and balance existing system, test to ensure code-compliant airflows, and right-size rooftop fans.
- b. Where applicable, provide timers, delay-off switches, or occupancy/humidistat sensors to local exhaust fans designed to provide intermittent ventilation. This measure will satisfy the requirements of Local Law 97's Prescriptive Energy Conservation Measures pathway.
- c. Mod Rehabs that rely on code-compliant natural ventilation shall ensure that all windows and openings required for ventilation are fully operable.
- d. Provide window screens to at least one operable window in each habitable space.
- e. Seal and protect existing ventilation ductwork during construction to prevent the migration of dust and debris into apartments.
- f. Provide residents with the "Ensuring Safe Ventilation in Your Home" flyer (resource is available here: [Preservation Design - HPD](#)).

REQUIREMENTS

Item b. will satisfy the requirements of Local Law 97's PECM pathway.

- a. Install ASHRAE 62.3-2013 compliant in-unit mechanical ventilation system where none exists, focusing on projects performing comprehensive air-sealing and window upgrades and on projects with gas cooking.
- b. Install Energy Recovery Ventilation (ERV) in lieu of exhaust-only strategies to serve dwelling units of buildings located in neighborhoods with high air pollution-related outcomes and ensure that the building has a maintenance plan to handle filter changes if equipment is located within dwelling units. See the [NYC's Environment and Health Data Portal](#) to identify neighborhoods where annual asthma emergency department visits related to PM2.5 exceed 150.

REACH

3.6 SYSTEM COMMISSIONING

- a. All HVAC and DHW systems repaired or installed during rehab should be commissioned per the functional testing via the [National HVAC Functional Testing Checklist](#), using the most current Energy Star Multifamily New Construction version available.
- b. All Envelope scope items repaired or installed during rehab should be verified per the [National Rater Field Checklist](#), using the most current Energy Star MFNC available.

REQUIREMENTS

SECTION 4 / ENVELOPE & ENERGY EFFICIENCY

Reducing energy use is a key step toward decarbonization but is especially critical to ensure that electrification doesn't increase energy costs or burdens on the grid. Optimizing building envelopes, offsetting loads with solar, and reducing energy use with efficient fixtures will reduce energy costs, reduce impacts on the NYC electric grid, and put buildings on a path to meet long term decarbonization goals.

4.1 BUILDING ENVELOPE

REQUIREMENTS

- a. All new windows, doors, skylights, roofing, and insulation installed on project must meet or exceed the requirements for U-value and Solar Heat Gain Coefficient (SHGC) per the current NYC Energy Conservation Code (NYCECC).
- b. For buildings electrifying heating system: All windows and roof insulation must meet or exceed the requirements for U-value and Solar heat Gain Coefficient (SHGC) per the NYC Energy Conservation Code (NYCECC).
 - Consider specifying high-performance windows, including casements and/or UPVC windows which perform better than double-hung aluminum windows.
 - If windows do not require replacement, but do not meet requirements noted above, consider refurbishing windows or installing window inserts to reduce heat loss.
- c. Perform air-sealing to separate conditioned space from unconditioned space, including perimeter of all windows, exterior doors, stair/elevator shafts, around air conditioners and PTACs, roof curbs, exterior wall or roof penetrations, and penetrations between conditioned and unconditioned space. Air-sealing is especially important in highly wind-prone areas (e.g. in coastal areas).
- d. Add insulation to all accessible exterior wall and ceiling/roof cavities to the extent that space allows.
- e. For buildings not requiring roof replacement, install cool roof coating to reduce heat gain.

- a. Achieve a total building thermal envelope UA that is at least 10% less than the total UA resulting from the Code-prescriptive U-factors. Further information can be found at UA-and-ResCheck.
- b. Design building to EnerPHit, EGC Plus, LEED v4.1 BD&C Zero standards.

REACH

Note that item c. will satisfy the requirements of Local Law 97's Prescriptive Energy Conservation Measures pathway.

High-performance envelopes can protect residents from impacts of extreme weather for up to 7 days.

4.2 SOLAR

- a. Per HPD's Solar Where Feasible Mandate, a Solar Feasibility Analysis is required, and solar must be installed "where feasible." Projects are considered feasible when the payback is 10 years or less. Solar should only be installed where roof can accommodate the additional loads and is less than 10 years old or where roof is re-warranted by manufacturer. All solar projects are required to comply with HPD's Solar Technical Requirements. Note free technical consultations with HPD's non-profit solar partner are available. Further information can be found on HPD's Solar Where Feasible webpage.

REQUIREMENTS

Community-shared solar can reduce energy bills for residents by as much as 10%. This is especially useful when residents pay for heating.

- a. All projects, but especially projects with resident-paid heating, should consider Community Shared Solar to benefit residents, either onsite from rooftop solar or by subscribing residents to offsite Community Solar Projects. Through HPD's Solar Where Feasible Program, our non-profit partner Here Comes Solar is helping connect people with community solar projects.

REACH

4.3 APPLIANCES

- a. All new appliances must be replaced with High Performance Electric alternatives when:
 - Electrical upgrades are required for other reasons (e.g., as part of a comprehensive electrification project), or
 - Building-wide gas line repairs/replacement is necessary and costs to electrify can achieve cost parity.
- b. Where electrification is not feasible, all new appliances to be ENERGY STAR.
- a. Utilize induction cooking to the extent feasible. Providing a starter set of cookware to tenants can be used to encourage participation in resident training events.
- b. Specify ENERGY STAR Most Efficient or CEE Tiers 2, 3, 4 or Advanced to the extent possible.

REQUIREMENTS

*System-based waivers are available if the utility cannot provide adequate electrical service, the electrification of a system is technically or financially infeasible, including if electrification would trigger reclassification of project to Sub Rehab or tenant relocation, and the project is unable to support these costs.

REACH

REQUIREMENTS

4.4 LIGHTING

- a. All new lighting must be ENERGY STAR certified LED or equivalent.
- b. Where new lighting is not being installed, replace bulbs with LED, or equivalent.
- c. All common area lighting must be Energy Star certified, LED, or equivalent.
- d. Common area lighting in buildings must be controlled by occupancy sensors or automatic bi-level lighting controls—except where not allowed by code.
- e. All exterior lighting shall have either motion sensor controls, photocells, or astronomic time-clock operation (or any combination of the above) to limit lighting when there is adequate daylight, and be Dark Sky-approved or equivalent. Further information can be found here: [Local Law 134 of 2016](#) and [Darksky.org](#)

REACH

- a. Install dimmers/sensors to the extent feasible at in-unit fixtures.
- b. Install integrated photovoltaic cells lighting on all exterior lighting.

4.5 WATER

REQUIREMENTS

- a. All new fixtures to be Low Flow/WaterSense certified designed to reduce usage by at least 20% (Toilet-1.28 GPM or Dual Flush (1.28 GPM max; 1.0 GPM min)/ Shower-1.75 GPM/ Kitchen Faucet-1.5 GPM/ Lav 1.0 GPM) or to the extent required by current code if more restrictive. Further information can be found here: [WaterSense Products Website](#).
- b. For existing fixtures, add aerators and replace showerheads with low-flow alternative. These items can often be provided for free through the utilities' Direct Install Programs.
- c. Test and repair all visible or known leaks.
- d. Where project includes landscaping, use native/drought-tolerant plant species.

REACH

- a. Install advanced water monitoring and leak detection system or a monitoring device to monitor water consumption.
- b. Incorporate rainwater harvesting for non-potable uses including landscaping, where appropriate.

Item d. satisfies the requirements of Local Law 97's Prescriptive Energy Conservation Measures pathway and Local Law 134.

Reducing water use can have significant impact on energy use and cost.

Grants and rebates may be available: 2022 N Grid Direct Install Multifamily Program, DEP Water Conservation and Reuse Grant

SECTION 5 / HEALTH AND WELLNESS

The items in this section cover measures that contribute to the health, safety and well-being of residents during and after construction.

Marcus Garvey Apartments, L+M Development Partners



Of the roughly 85,000 chemicals available in the market, few are adequately tested for human health impact.

Use HomeFree's Product Guidance to find safer products for your project.

REQUIREMENTS

- a. All interior paints, coatings, and primers used on a project should have a VOC content less than the thresholds provided by the most recent versions of SCAQMD 1113, with VOC emissions verified as compliant with California Department of Public Health (CDPH) Standard Method.
- b. All interior adhesives and sealants used on project to have VOC content less than or equal to the thresholds provided by the most recent version of SCAQMD 1168.
- c. New flooring must comply with CDPH emission requirements. Flexible PVC with phthalates are not allowed. Carpet is not allowed in building entryways, wet areas, or utility rooms.
- d. New insulation must be formaldehyde-free.
- e. Composite Wood used on the project must have formaldehyde emissions less than or equal to thresholds provided by CARB Phase 2 and/or TSCA Title IV. For interior products not covered by these requirements, products must have no added urea formaldehyde (NAUF).

REACH

- a. Specify and install products with Health Product Declarations or Declare labels.
- b. Specify materials that are on the International Living Future Institute's Red List Free Products List or listed in the Healthy Building Network's HomeFree Product Selection Guide.

Further information can be found here: [MATERIALS | Green Communities Criteria & Certification](#) in sections 6.1 and 6.4 and Appendix E.

5.2 MOISTURE AND MOLD

Moisture and mold exacerbate asthma, especially in children.

REQUIREMENTS

- a. In bathrooms, kitchens, and laundry areas, use moisture-resistant finishes and backing materials when being replaced, and avoid unsealed grout.
- b. Per Local Law 55 of 2018, all multiple-dwelling owners must investigate and remove all indoor health hazards that trigger asthma, including pests, and ensure that properties remain free of such hazards.
- c. For mold removal > 10 sf in buildings with 10+ units, a licensed remediator must be used.

Further information can be found here: [DOHMH: Mold](#)

Refer to HPD Preservation Checklists for more detailed requirements.

5.3 ASBESTOS

- a. Building owners must confirm the presence of asbestos containing materials (ACM) that may be disturbed during a rehabilitation project. Evaluating the presence of ACM requires the services of a certified professional known as an “asbestos investigator.”
- b. An affirmative finding of ACM will require the business owner to engage the services of an “asbestos abatement contractor” who is licensed by the State of New York Department of Labor (NYS DOL).
- c. These regulations include the requirement that the New York City Department of Environmental Protection (DEP) be formally notified at least seven days before abatement activities take place.
- d. Upon completion of ACM abatement, air testing and monitoring are required before the restricted work areas may be safely reoccupied. Select an air testing firm licensed by NYSDOL, linked below under Additional Information

Further information can be found at [Asbestos Rules and Regulations \(NYC Business\)](#)

5.4 LEAD PAINT

- a. All work in housing built prior to 1978 that would disturb interior or exterior paint must follow regulation put forth by the federal Environmental Protection Agency (EPA) under Title 40 of the Code of Federal Regulations (CFR) Part 745.
- b. All housing built prior to 1978 must follow regulation put forth by the federal Department of Housing and Urban Development (HUD) under 24 CFR Part 35, if such housing is federally owned or receiving federal assistance to which this regulation would apply.
- c. All housing built prior to 1960 where at least one unit is occupied by persons other than the owner of such dwelling or a member of such owner’s family must follow Local Law 1 of 2004, as amended. Local Law 1 of 2004 must also be followed if such housing was built between 1960 and 1978 and the owner knows there is lead-based paint. As of the date of these Guidelines, the definition of lead-based paint and the lead-contaminated dust clearance levels are both stricter under Local Law 1 of 2004 than those at the federal level under EPA or HUD.
- d. Work that would disturb paint where one or more of the requirements above would apply must follow the appropriate contractor certification and safe work practice requirements of such applicable requirement, or the stricter of such if more than one requirement applies.
- e. Owners of all housing built prior to 1978 must follow the HUD and EPA Lead-Based Paint Disclosure Rule pursuant to Section 1018 of Title X.

Further information can be found at [NYC Lead Poisoning Prevention Law and Lead-Based Paint \(HPD\)](#), [Lead | US EPA](#), and [Office of Lead Hazard Control and Healthy Homes | HUD.gov](#)

5.5 INTEGRATED PEST MANAGEMENT

In some NYC neighborhoods, over 50% of households report seeing cockroaches every day

Integrated pest management addresses dangers from both pests and pesticides

REQUIREMENTS

- a. Seal all wall, floor, and joint penetrations with low-VOC caulking or other appropriate nontoxic sealing methods (window screens, pest-resistant door sweeps, escutcheon plates, and elastomeric sealants) to prevent pest entry. Use rodent- and corrosion-proof screens (e.g., copper or stainless steel mesh or rigid metal cloth) for openings greater than ¼-inch. Pay close attention to sealing off entry points under kitchen and bathroom sinks. Note that this can be done in conjunction with air-sealing.
- b. Per Local Law 55 of 2018, all multiple-dwelling owners must investigate and remove all indoor health hazards that trigger asthma, including mold, and ensure that properties remain free of such hazards.
- c. Speak with building staff and residents to identify areas of potential or historic pest entry and address those areas in the Pest Management plan.

REACH

- a. Provide a service contract with a licensed pest management professional (PMP) or environmentally friendly pest management provider.

Further information can be found at [NYC DOH Pest Control](#) and [NYC DOH Rat Prevention](#)

5.6 WASTE MANAGEMENT

- a. All newly-altered mixed-use buildings of 150 or more units that are enlarged or modified, or having 50% or more of floor area renovated to be classified by DOB as a multiple dwelling building are required to submit a [Waste Management Plan](#) to the DSNY.
 - b. Allocate space for collection of organics in all waste collection areas.
 - c. Provide separate bin for collection of trash and recycling in all dwelling units and shared community rooms including a designated area near mail/package rooms to collect cardboard.
 - d. Post signage in common waste areas and provide educational resources to residents about recycling.
- a. Where not already required, include space in common areas for recycling, including a designated area near mail/package rooms to collect cardboard.
 - b. Request a DSNY site visit or require staff to attend a [DSNY Zero Waste Building Maintenance Training](#) to help improve recycling in an apartment building.
 - c. For projects in Community Districts where DSNY's [Curbside Composting](#) is available, buildings are strongly encouraged to sign up for and participate in the program, using DSNY rat-proof bins.
 - d. Enroll eligible projects in DSNY's free [ecycleNYC](#) and [refashionNYC](#) programs for buildings with 10 or more units.

REQUIREMENTS

REACH

DSNY offers free Zero Waste Building Maintenance Training for building staff

5.7 ACTIVE DESIGN

- a. In elevator buildings, increase the visibility and aesthetic quality of stairwells, eliminate stairway door locks where possible, and provide signage to encourage use of stairs.
- a. Provide indoor or outdoor activity space(s) in projects that are open to all residents, including safe walking paths where feasible.
- b. Provide secure bike storage that is easily accessible for residents.

Further information can be found at [Active Design Guidelines](#).

5.8 SMOKE FREE BUILDINGS POLICY

- a. Per the NYC Smoke Free Air Act (SFAA), smoking or vaping of any substance is prohibited in common indoor areas of buildings with three or more residential units. Owners of buildings of three or more units must provide signage noting “No smoking” and “No electronic cigarette use” in common areas and are required to create a policy on smoking and share it with current and future tenants (including by noting the smoking policy language in tenant leases).



SECTION 6 / ACCESSIBILITY AND AGE-FRIENDLY DESIGN

The City aims to better support developers to provide accessible housing and meet the needs of New Yorkers with disabilities. In addition, Aging in Place is an HPD initiative that works with buildings already receiving financing through an HPD Preservation loan program to assess and finance in-unit and building-wide modifications to assist seniors and people with disabilities in those buildings maintain independent, safe, and comfortable lives. Aging in Place is part of the Seniors First initiative.

6.1 ACCESSIBILITY

- a. All HPD-assisted projects must comply with the accessibility requirements of Section 504 of the Rehabilitation Act of 1973. Section 504 requires that, for projects involving substantial alteration (where the project contains 15 or more dwelling units, and the cost of the alterations is 75 percent or more of the replacement cost of the completed facility) a minimum of five percent (5%) of the total number of dwelling units must be accessible and designated for households with a person with a mobility-impairment. An additional minimum of two percent (2%) of the total dwelling units must be designated for households with a person with a hearing or vision impairment. These units must be distributed throughout the project and made available in a sufficient range of sizes as not to limit the choice of individuals/households with physical impairments. These units must be distributed proportionally across affordability brackets to the extent possible.
- b. The *Uniform Federal Accessibility Standards (UFAS)* or the *2010 ADA Standards for Accessible Design* serve as the design standards for compliance with *Section 504 of the Rehabilitation Act of 1973*. The requirements for new construction and substantial alteration projects differ from those for moderate alterations of existing housing; refer to Section 8.23 (b) "Alterations of Existing Housing Facilities" of the implementing regulations.
- c. If existing elements, spaces, essential features, or common areas are altered, then each altered element, space, feature, or area shall comply with UFAS Sec. 4.1.1 to 4.1.4.
- d. All projects must comply with the Accessibility requirements in Chapter 11 of the *New York City Building Code*.

REQUIREMENTS

Further information can be found at HPD Accessibility Guide.

6.2 AGE-FRIENDLY DESIGN

- a. HPD-assisted projects in the preservation pipeline must accommodate seniors and tenants with a disability upon request for any amenities needed within their apartment for comfort and safety in kitchens and bathrooms. These amenities may include items listed in the HPD “Aging-In-Place Resident Surveys” for Mod and Sub Rehabs.
- b. Provide sufficient, consistent light levels throughout the building and site, especially on pathways and at entrances.
- c. Install dual handrails and slip-resistant stair strips in common and exterior areas.
- d. In all dwelling units in elevator buildings, and ground floor units where ground floor is accessible, include grab bars & accessible bathroom fixtures (including walk-in/low-threshold showers, ADA-compliant toilets, sinks with removable cabinets, and anti-scald devices).
- a. Design interior and exterior doors to be easily accessible, including minimal thresholds/saddles, lever handles, and/or automatic openers.



REQUIREMENTS



REQUIREMENTS
FOR SENIOR
BUILDINGS



REACH

Further information can be found at HPD Aging in Place including tenant surveys for Mod and Sub Rehabs.

SECTION 7 / BROADBAND

Right now, half of New Yorkers living in poverty do not have internet at home. The neighborhoods with the lowest rates of internet adoption are also the focus of most of the City's affordable housing development.

Multifamily housing projects present opportunities to close this digital divide and improve the socioeconomic outcomes of many of the city's most vulnerable populations. Internet service that is robust enough to perform daily tasks (also known as broadband) is essential for enrolling in government programs, seeking employment, and access to education. Broadband has become as necessary as a utility.

Installing broadband can help bridge the digital divide.

REQUIREMENTS

- a. Provide wireless service in project common amenity areas, including lobbies, lounges, common rooms, laundry rooms, outdoor areas, and other shared spaces, available to residents and staff.

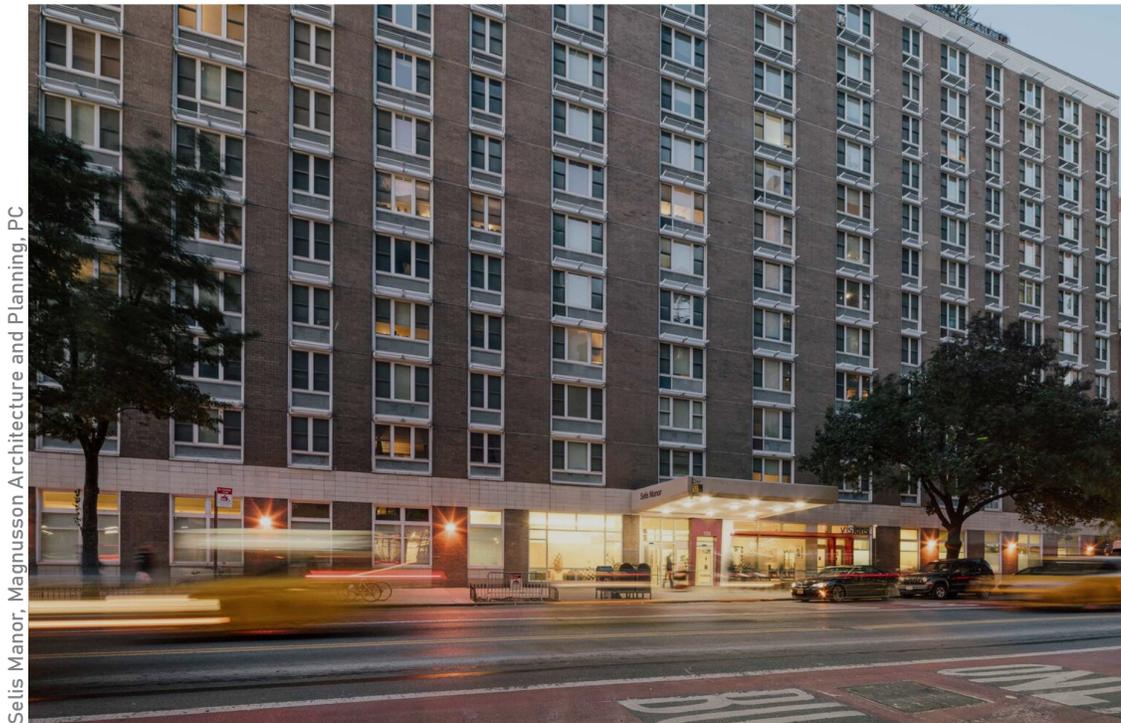
REACH

- a. To the maximum extent feasible within HPD term sheets and as coordinated with pertinent financing program(s), all HPD-assisted projects must be designed and constructed to provide high-quality internet access and service, with speeds that are at least 100 megabits per second upload and download, as part of their lease contract and at no additional cost to the tenant. Residents should be given the option to enhance their individual level of service at their own cost.

Further information can be found at [HPD's Broadband Website](#).

SECTION 8 / BUILDING OPERATIONS

Regular building Operations & Maintenance (O&M) practices minimize building maintenance needs and utility consumption and ensure a healthy, safe, and durable living environment for residents.



8.1 PROJECT MANUALS

REQUIREMENTS

- a. Provide Operations & Maintenance Manual for all projects. The manual must include O&M guidance and specifications for all Mechanical, Electrical, and Plumbing equipment, including O&M schedules, the location of all equipment shut-offs, and safe cleaning and pest protocols.
- b. Provide Emergency Management Manual or document for staff and residents that includes a building evacuation plan, location of backup power and broadband on property (if any), and a means to locate outside emergency resources (e.g. Emergency Shelters and Cooling Centers, Public Wi-Fi, and Hurricane Resources).
- c. Provide Resident Manual and flyers that include easy-to-read instructions for all tenant-controlled heating and hot-water equipment and appliances, including tips for saving energy for resident-paid equipment, Home Energy Assistance Program (HEAP), and other low-income energy assistance programs. Manual must also include instructions for tenants to report leaks and maintenance issues and must be provided in multiple languages.
- d. Digital copies must be submitted to HPD.

Further information on utility assistance programs can be found at [Con Ed's Utilities Assistance Webpage](#).

8.2 STAFF & RESIDENT TRAINING

REQUIREMENTS

- a. For building staff: Require staff to be present for mechanical system start up and provide periodic training on system use, including when onboarding new staff. Courses like CUNY BPL's free Building Operator Training and Building Re-Tuning, and Urban Green Council's GPRO O&M courses can help building owners save energy and money.
- b. For building residents: For buildings with heat pumps or other unfamiliar in-unit technologies, provide training to residents on system use and optimal equipment settings within 30 days of move-in or project completion. Provide additional periodic training as needed, including at tenant turnover or upon request by tenants.

REACH

- a. Provide videos for staff and residents on equipment use and maintenance in multiple languages. Ensure that resource is easily found and is kept up-to-date.

Further information can be found at [CUNY BPL Building Re-Tuning Course](#), [CUNY BPL Building Operator Training](#), and [Urban Green Council GPRO O&M Course](#)

8.3 BENCHMARKING

REQUIREMENTS

- a. All HPD-financed projects with buildings of 5 or more units must benchmark with a prequalified benchmarking provider.

Further information can be found at [HPD's Benchmarking webpage](#).

Free training is available for building staff through CUNY's BPL Program.

8.4 ELEVATORS

- a. Permits must be obtained for all elevator work. To obtain an elevator permit, an NYC licensed professional or registered design professional must submit a permit application in DOB NOW: Build.
- b. Building owners are required to have a current maintenance contract with an approved elevator agency available to perform elevator repair work, maintenance, and replacement as defined by the American Society of Mechanical Engineers (ASME).
- c. Building owners are to conform with latest *Administrative Code of the City of New York*, *Building Code of City of the New York* including Appendix K, Sub-Chapters K1 and K3, the *Electrical Code of the City of New York*, the *Americans with Disabilities Act*, ANSI A117.1, and all other authorities having jurisdiction to maintenance safe operational system.

REQUIREMENTS

Note that elevator modernization projects are eligible for utility incentives if drive is upgraded from a less efficient to a more efficient drive. More information can be found here: [AMEEP Program Manual](#)

8.5 LOCAL LAW 11 / FAÇADE INSPECTION SAFETY PROGRAM (FISP)

- a. Per the DOB, owners of buildings with exterior walls greater than 6 stories in height must have exterior walls and appurtenances inspected every 5 years – and they must file a technical façade report with the Department of Buildings. The last digit of a building's block number determines the filing deadline.
- a. Property owners are strongly encouraged to consider façade upgrades to coincide with FISP cycles. Buildings requiring extensive façade repairs are often good candidates for over-cladding/exterior insulation or Deep Energy Retrofits.

REQUIREMENTS

REACH

Further information can be found at NYC Construction Codes §28-302.1 and RCNY §103-04 and FAQs for information on 1RCNY 101-07 and 1RCNY 103-04.

APPENDICES

CHAPTER 3

A.1 HEATING EQUIPMENT: HIGH PERFORMANCE ELECTRIC

Heating Equipment must meet or exceed the following efficiencies:

- VRF Multi-Split must have meet NEEP's cold climate COP requirements @47°F, 17°F, 5°F based on outdoor unit capacity and must be certified by AHRI Standard 1230.
Further information can be found at [NEEP Cold Climate Air Source Heat Pump Specficiation](#), [NEEP Cold-Climate Product List](#), [ENERGY STAR Water Heater Key Product Criteria](#)
- Packaged Terminal Heat Pump (PTHP) & Single Package Vertical Heat Pump (SPVHP) must have a compressor with variable capacity (three or more distinct operating speeds or continuously variable), have a COP @5°F ≥ 1.5 (at maximum capacity operation), be certified by AHRI Standard 310/380
- Electric Resistance backup is not permitted.
- Central Equipment must be BAC-net capable.
- VRF systems that do not include Heat Recovery shall be zoned appropriately to ensure that all spaces on the same system have similar requirements for heating and cooling
- All equipment must be installed per HPD's [Technical Requirements for Heat Pumps](#) and should follow the guidelines outlined in HPD's [Best Practices Documents](#).
- All loads must be calculated according to ACCA Manual J 8th Edition or according to the Residential Cooling and Heating Load Calculations chapter of ASHRAE Handbook of Fundamentals and ANSI/ASHRAE Standard 183-2007
- All equipment must be sized according to ACCA Manual S or according to NYC mechanical code
- Lower efficiency equipment (using electric resistance) may be used in limited quantities as necessary in bathrooms, common stairwells and vestibules where heat pumps may not be appropriate. Units located in limited occupancy areas (e.g. bathrooms) must have timer controls; and equipment used for freeze protection must be set at 50 degrees maximum.

Note that electric heating must meet the requirements of HPD's [Electric Heating Policy](#) and HPD's [Resident-Paid Heating Policy](#).

A.2 HEATING EQUIPMENT: NON-ELECTRIC

Heating Equipment must meet or exceed the following efficiencies to ensure that AMEEP incentives are available:

- Condensing Boilers must have an AFUE of 90% for boilers < 2,500 kBtu/h or 93% for boilers > 2,500 kBtu/h
- Hydronic Boilers must have an AFUE of 85% for boilers < 2,500 kBtu/h or 88% for boilers > 2,500 kBtu/h
- Steam boilers must have an AFUE of 82%
- Installation of new oil-fired equipment is prohibited, and under no conditions may #4 oil be used as a primary or backup fuel
- All loads must be calculated according to ACCA Manual J 8th Edition or according to the Residential Cooling and Heating Load Calculations chapter of ASHRAE Handbook of Fundamentals and ANSI/ASHRAE Standard 183-2007
- All equipment must be sized according to ACCA Manual S or according to NYC mechanical code

A.3 DHW SYSTEMS: HIGH PERFORMANCE ELECTRIC

DHW Equipment Efficiencies must meet or exceed the following efficiencies:

- System must comply with applicable Energy Star Water Heater requirements
- Residential Heat Pump Water heating equipment must have a UEF \geq 3.3, and Commercial Heat Pump Water heating equipment must have a COP \geq 3.0, and have an AHRI Certificate if applicable.
- Central Systems must be capable of producing and storing minimum 140-degree water at 5-degree outdoor air temperature.
- All Heat Pump Water Heating equipment must be installed per HPD's Technical Requirements for Heat Pump Water Heaters and should follow the guidelines outlined in HPD's Best Practices Documents.

Note that resident-paid electric hot water must meet the requirements of HPD's Electric Heating Policy.

B.1 MAKING BUILDINGS ELECTRIC-READY

HVAC equipment and appliances installed today will be in service for many years. Installing fossil-fueled equipment today will prevent a building from meeting long-term carbon emissions limits, including the 2050s GHG emissions limits required by Local Law 97 for many buildings. Where electrification of a system is not currently required or planned, buildings can incorporate “electric-ready” solutions or create a “Path to Electrification” that can lower the heavy lift of future electrification work.

Note that NYSERDA's Low-Carbon Capital Planning Support Program offers 75% or more cost-share incentives to help pay for energy studies that focus on electrification or electrification-readiness.

- Reduce overall electric demand by improving building envelope, and consider how future equipment may affect decisions on windows, ventilation, and roof use being made today.
- Consider how future systems will be metered and billed, noting that not all billing arrangements are suitable or allowable for all building populations.
- Leave additional access and space for future mechanical equipment, especially on rooftops and in mechanical spaces - electrification of space heating and hot water often require significant outdoor space for large equipment. These requirements should be balanced with requirements for solar or green roofs.
- Provide adequate space in the switchgear room and plan for future feeders serving the areas where future outdoor heat pumps may be located
- If building requires electrical service upgrades, size upgrades to accommodate future electrical loads, to the extent feasible or allowed by code.
- Install sufficiently rated individual branch circuit outlets for future equipment to the extent feasible:
 - For future electric appliances (e.g. induction stovetop ranges) and heat pumps within apartments
 - For future electric equipment and appliances in common areas, mechanical spaces, and in exterior locations as may be needed.
- Reserve space in new panels for future equipment. The circuits must be labeled as “spare” and loads must be included in the load calculations of the original panel box installation.
- For buildings implementing hydronic heating upgrades, design system so that heating plant can be converted without requiring additional changes to the distribution and terminal units (i.e. size terminal units for supply water temperatures commonly provided by air-to-water heat pumps, approximately 140°F at design conditions, where feasible).

B.2 CREATING A “PATH TO ELECTRIFICATION”

- Consider how building will electrify all non-electric equipment in the future, including space heating, hot water, and appliances.
- Consider when these upgrades will be required – e.g., to comply with future Local Law 97 emissions limits, at system end-of-life, or at project refinancing.
- Consider costs for future electrification – including equipment purchase and installation as well as service and distribution upgrades – and identify future sources of funding to support this work – including building reserves if project will implement a phased approach.
- To the extent feasible, incorporate Electric Readiness into current project scopes to reduce future costs, to minimize duplicative work, and to avoid major investments into systems that cannot be electrified in the future.

C.1 SELECTING A HEAT PUMP SYSTEM

Choosing the right heat pump systems is complicated because most heat pumps provide both heating and cooling, making billing complex. This is especially marked in NYC affordable housing where owners typically only pay for heating and residents pay for cooling.

Note that electric heating and hot water systems must comply with HPD’s Electric Heating Policy which ensures that efficient systems are encouraged, poorly performing systems are not allowed, and tenants are protected. On HPD-subsidized projects, resident-paid-electric heat is only allowed within certain Preservation programs and for certain populations. All projects must be pre-approved by HPD and must follow strict protocols of HPD’s Tenant Paid Heat Pump Policy, which include (but are not limited to):

- HPD pre-approval is required for resident-paid heating.
- For retrofits, HPD currently only allows resident-paid heating for co-ops.
- Where applicable (e.g. projects in HPD’s ANCP program) projects must be rent-restructuring and get HCR approval for a modification of services
- Owner will be required to pay a concession for all heating until the rent restructuring has been finalized.
- Only NEEP-listed cold-climate Air Source Heat Pumps for which HPD has a published utility allowance may be used (see current allowances on HPD’s Sustainability webpage)
- The M&O must be adjusted to account for a shift in heating or cooling costs.
- Regulatory Agreements (or equivalent documentation for coops) will require tenant protections including but not limited to lease riders noting that heat is resident-paid.

Billing Strategy	Typical Use	Bldg/Apt Configuration	Possible Heat Pump Configurations	Considerations	Initial Cost	Refrigerant Leak Risk
Resident-paid Heating & Cooling <small>(requires HPD approval)</small>	Co-ops	≤7 stories	Mini-split or Room Heat Pump on apartment meter	Simple option when resident-paid heating is allowed	\$\$\$	High
Owner-paid Heat; Resident-paid Cooling	Rental buildings where resident-paid heat is not allowed by HPD	Buildings where refrigerant lines are too long for mini splits	Central VRF on house meter w/ submetered cooling	Billing for cooling usually requires a 3rd party and collecting can be difficult	\$\$\$\$\$	High
		≤7 stories	Mini-split on house meter w/ submetered cooling		\$\$\$\$	High
		Smaller apartments (0-1BR) and buildings w/ existing PTACs or AC sleeves	Room Heat Pumps** on apartment meter w/ heating wired to house meter	Simplest solution for split-billing, but new to market and more costly for large apartments	\$\$\$\$**	Low
Owner-paid Heating & Cooling	Senior / Supportive Housing, rental buildings where cooling can be included in the M&O budget	Buildings where refrigerant lines are too long for mini splits	Central VRF on house meter	Simple & minimizes risk for residents, but cost for cooling must factored into M&O	\$\$\$\$	High
		≤7 stories	Mini-split or Room Heat Pump on house meter		\$\$\$	High

* Resident-paid heating is only allowed with prior HPD & HCR permission and must comply with all HPD resident-paid heat requirements.

** Costs are based on 0-1BR apartments—will be higher for larger apartments.

** Room Heat Pumps may require backup electric resistance heating in larger spaces, which is only allowed with prior HPD approval.

*** Number of "rooms" = number of bedrooms + 2

D.1 CREATING A “PATH TO ELECTRIFICATION”

Local Law 97 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 buildings that exceed their annual emissions limits will face financial penalties. Buildings that include affordable and rent-regulated housing are not exempt, but are treated differently under the law:

Local Law 97 Compliance Guidelines for Rent Regulated and Affordable Housing



Local Laws 92/94 of 2019 mandate solar or green roofs on all new roofs. However, HPD projects are currently subject to an alternative compliance pathway until November 2024 and must submit a Solar Feasibility Analysis and include solar where it is deemed “financially feasible” through our Solar Where Feasible Program.

Local Law 84 of 2009 Requires buildings greater than 25,000 square feet to benchmark their energy and water use. HPD’s benchmarking requirement for HPD-financed projects > 5 units satisfies the LL84 requirement.

Local Law 87 of 2009 Requires buildings over 50,000 GSF to undergo energy audit and retro-commissioning (RCx) measures and file an Energy Efficiency Report (EER) every ten years.

Local Laws 88 of 2009 and 134 of 2016 Require common areas in residential buildings greater than 25,000 GSF to upgrade lighting to meet current NYCECC standards by 2025. This requirement overlaps with the LL97 Prescriptive Measures.

Local Laws 31/32 of 2016 Requires new construction and substantial rehabs to comply with Enterprise Green Communities or LEED Gold or above. The law additionally requires the following:

HVAC System Replacements > \$2 million must reduce energy use by 10%

Plumbing System Upgrades > \$500,000 must reduce potable water use by 30%.

Local Law 11 / Facade Inspection and Safety Program (FISP) states that owners of buildings with exterior walls of more than six (6) stories must have exterior walls and appurtenances inspected every five (5) years and a technical façade report must be electronically filed through DOB NOW: Safety.

Local Law 152 of 2020 Requires that gas piping systems in all buildings, except for buildings classified in occupancy group R-3, must be inspected by a Licensed Master Plumber (LMP), or a qualified individual working under the direct and continuing supervision of a LMP, at least once every four years according to the schedule set out in 1 RCNY §103-10.

Local Law 55 of 2018 Requires that all multiple-dwelling property owners in NYC investigate and remove all indoor health hazards which trigger asthma, like mold, rodents, and cockroaches. Landlords must also apply safe and successful measures to ensure that their properties remain free of indoor health hazards.

E.1 RESOURCES FOR BUILDING OWNERS AND CONSULTANTS

HPD's Sustainability Webpage includes information about all of our programs, policies and resources:

Incentive Programs: The Guidelines were designed to align with the requirements of various utility incentive programs to ensure that all projects qualify for incentives. Projects are strongly encouraged to seek all available utility and NYSERDA incentives or programs to help offset costs, including:

- The joint-utility New York State Affordable Multifamily Energy Efficiency Program (AMEEP) has two prescriptive pathways that yield up to \$2,000/ DU for basic energy efficiency
- NYSERDA's Low Carbon Pathway Program incentivizes studies for and construction of low carbon retrofits.
- NYSERDA's RetrofitNY program incentivizes Deep Energy Retrofits.
- Con Ed's Clean Heat program funds heat pumps for space heating and hot water.
- DEP's Water Reuse Program incentivizes water reuse and reduction.

Building Operator Training: NYC offers multiple opportunities to educate and build capacity for building operators. Offerings include links to webinars and other free trainings around new technologies, building electrification, solar, local laws, and much more.

- NYC BPL's Building Operator Training is free 30-hour online training course for supers, operators and maintenance staff of NYC multifamily buildings. The course is offered in Spanish and English: [:https://cunybpl.org/workforce-development/nyc-building-operator-training/](https://cunybpl.org/workforce-development/nyc-building-operator-training/)
- CUNY BPL offers a Building Re-Tuning (BRT) Course that coaches operators to improve operations to improve comfort and energy efficiency. This is a free, 15-hour course. <https://cunybpl.org/workforce-development/building-re-tuning/>
- Urban Green Council's GPRO O&M course is one of NYSERDA's standard offerings. <https://www.gpro.org/operations-maintenance>
- NYSERDA has a directory of free online training as part of their Clean Energy Workforce Development Program.

Technical Assistance for Building Owners: NYC offers multiple opportunities to educate and build capacity for building owners, including:

- The NYC Accelerator provides resources, training and one-on-one expert guidance to help building owners and industry professionals improve energy efficiency and reduce carbon emissions from buildings in NYC.
- The Building Energy Exchange (BE-Ex) BE-Ex is a center of excellence dedicated to reducing the effects of climate change by improving the built environment. BE-Ex accelerates the transition to healthy, comfortable, and energy efficient buildings by serving as a resource and trusted expert to the building industry through events, trainings, and technical resources: Home - Building Energy Exchange (be-exchange.org)
- As part of the EGC or LEED Certification process, building owners, architects and contractors must submit proof of Green Buildings Trainings every 2 years. The following courses are available and may be taken in alternating cycles. These courses are informative but optional for Mod Rehabs. :

Healthy Homes NYC is a free webinar developed by the Health Department and the Department of Housing Preservation and Development (HPD) for HPD-financed projects. It is intended for architects, general contractors and building owners/ developers. The training focuses on healthy building practices during building design, construction and renovation and during on-going building operations and maintenance.

HPD's new Green Communities Training: Climate Ready Buildings is a free, online training developed by the NYC Department of Housing Preservation and Development (HPD). It is a pre-requisite to the certification process for the Enterprise Green Communities Criteria for HPD-financed projects.