

# HPD DESIGN GUIDELINES

for PRESERVATION

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SUBSTANTIAL REHABILITATION  
GUT REHABILITATION

Version 1.0

## 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

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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 (NYSAAFH), 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).

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## 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

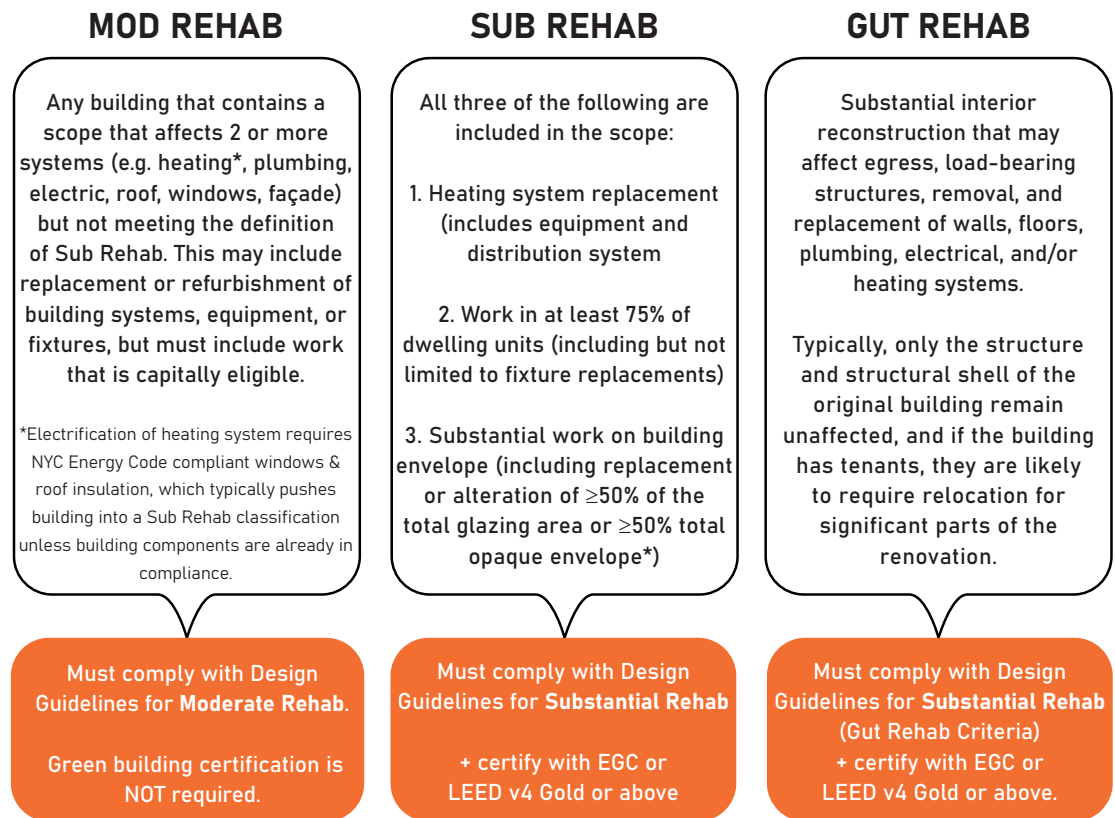
# INTRODUCTION

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 Mod 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.

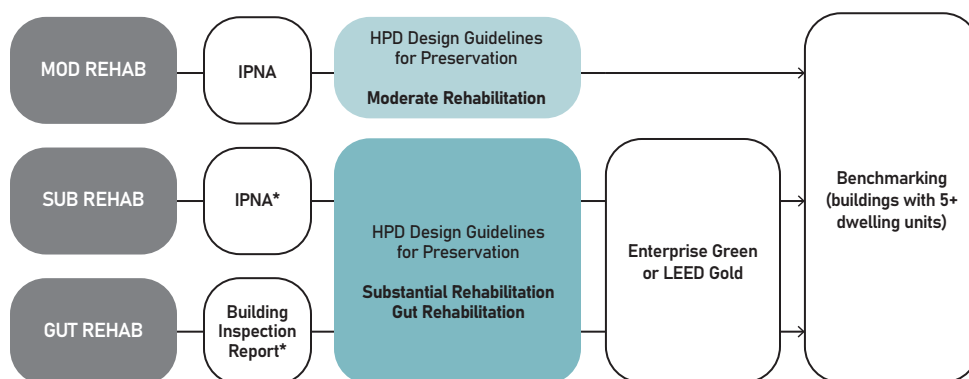


### NOTES ON REHAB CLASSIFICATIONS

- 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.

- 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 project 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 submitting 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.

Alert: Enterprise Green Communities has a separate criteria for waiver process. More information can be found here: [Requirements & Eligibility | Green Communities Criteria & Certification](#)

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 submitting 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.

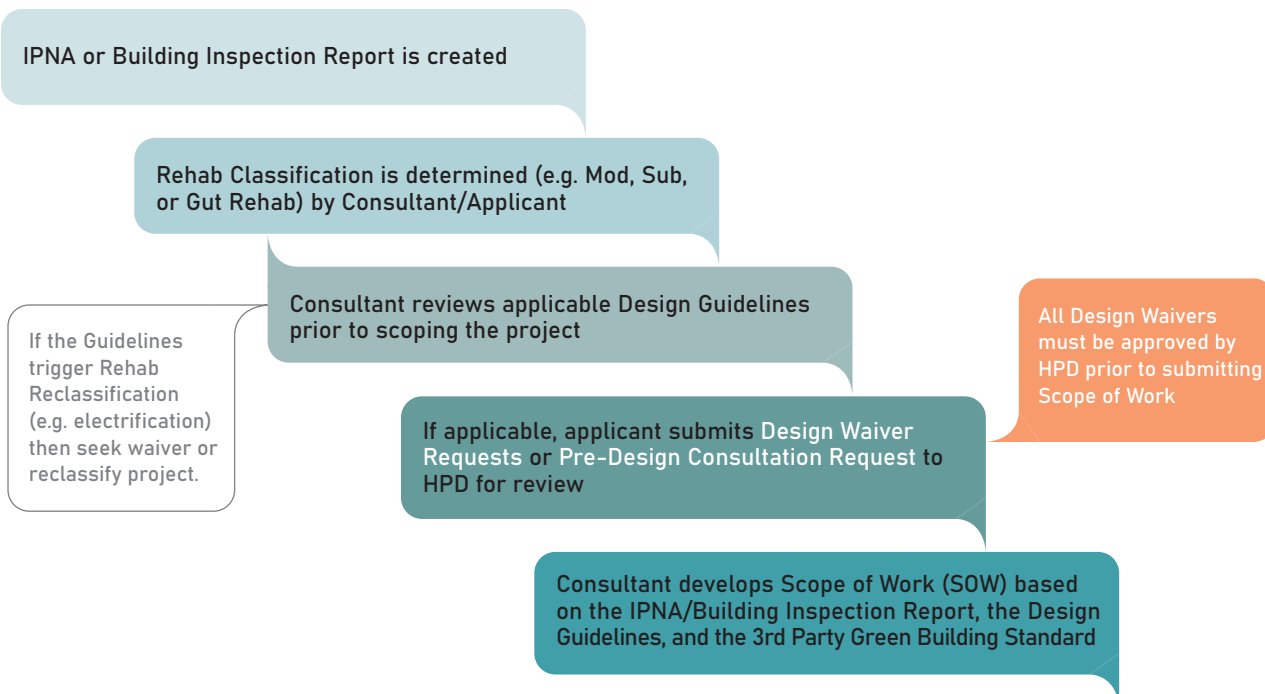
A project is scoped based on the recommendations outlined in the IPNA plus, at minimum, all mandatory baseline criteria required by the HPD Design Guidelines and, for Sub and Gut Rehabs, third-party green building standards. In addition, projects will be required to offset costs to the extent possible 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: [Preservation Design](#).

- 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](#) webpage.

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 submitting Scope of Work.

Enterprise Green Communities has a separate criteria waiver process for projects that cannot meet a mandatory criteria requirement. More information can be found [here](#).

**3.7 EGC/LEED Authorization** For projects required to comply with Enterprise Green Communities or LEED, submit EGC Prebuild Approval package or LEED Waiver request and all supporting documentation along as part of the Scope of Work Submission, which should occur at least 3 months prior to loan closing using the protocol outlined [EGC 2020 NYC Overlay Instructions](#). The following items must be submitted:

- a. EGC PreBuild Authorization Form: Note that project name must match the name in use by HPD
- b. Completed Design Guidelines Checklist including Project Summary Tab, signed by the owner and architect of record
- c. Design Waiver Form, approved and signed by HPD, if applicable
- d. Signed HPD Solar Approval Form
- e. Green Communities Training Certificates
- f. The completed IPNA Resiliency Tab in lieu of the Climate Risk Exposure Tool
- g. The completed IPNA Local Law 97 Compliance Tab, updated if necessary to reflect the actual scope
- h. Project Overview Tab from EGCC portal showing the correct 5-digit HPD Project ID

Information about HPD's \$24M Retrofit Electrification Pilot can be found [here](#).

**3.8 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. Projects must 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) Program and NYSERDA's multifamily programs, including the Low Carbon Pathway Program and RetrofitNY. In addition, Con Ed's Clean Heat program may be available to offset the cost of electrification and DEP's [Comprehensive Water Reuse Program](#) for reducing water use. See Appendix F for additional information.
- 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** Project must certify with the current NYC Overlay of Enterprise Green Communities (EGC) or LEED v4 Gold.

**REACH** Design and construct the project to Enterprise Green Communities Plus, LEED Platinum, LEED v4.1 BD&C Zero, PHI or PHIUS standards. Note that Passive House projects must also comply with EGC or LEED.

## 1.2 GREENHOUSE GAS EMISSIONS Aligns w/ EGC 5.1b

**REQUIREMENTS** All projects must submit an LL97 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 must be designed to meet, at minimum, 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 Local Law 97's 2050 GHG emissions limits. 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 Points may be available through EGC 5.2 for compliance with this requirement

**REQUIREMENTS** Meet the minimum requirements outlined in the applicable Green Building standard

**REACH** Design building to have or approach a site EUI of 42 kBtu/sf.

## 1.4 ELECTRIFICATION Points may be available through EGC 5.5 for compliance with this requirement

**REQUIREMENTS (Sub Rehabs)\*** The following systems, equipment, and appliances are required to convert to high-performance electric equipment meeting the performance standards outlined in Appendix A:

- Heating systems that use oil or electric resistance as a primary heating fuel
- Steam heating systems that are being replaced or extensively modified
- Domestic Hot Water systems in buildings < 7 stories
- Heating and Domestic Hot Water systems located in basements and cellars in flood-prone buildings (as defined in Section 2) as a means to protect equipment from future flooding
- In addition, all appliances where appliances are being replaced and electrification of the appliances does not, on its own, trigger additional costs for electrical service or distribution upgrades and electrification achieves cost parity with non-electric upgrades

\*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.

\*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.

**REQUIREMENTS (Gut Rehabs)\*** The following heating and hot water systems and appliances are required to convert to high-performance electric equipment meeting the performance standards outlined in Appendix A:

- All heating systems
- Domestic Hot Water systems in buildings < 7 stories
- All appliances (e.g., gas stoves, gas clothes dryers, etc.)

For systems not required to convert to electric, design system 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.

**REACH** Buildings to be All-Electric, with the exception of emergency generators.

See HPD’s [Retrofit Electrification Pilot Webpage](#) for information about potential funding, technical requirements for heat pumps, FAQs and design recommendations, and many other resources.



## 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 shown as flooded 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 Aligns w/ EGC 1.1

- 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](#). The Resiliency Tab will be accepted for EGC/LEED applications in lieu of the CRDG Risk Exposure Tool. The tool will help project teams determine which flooding requirements will affect the project and help identify the appropriate Design Flood Elevation (DFE) for projects in flood-prone areas.

## 2.2 FLOODING & STORMWATER Aligns w/ EGC 3.4, 3.5, 5.9

### REQUIREMENTS

- a. DEP's Unified Stormwater Rules now 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. Obtain an elevation certificate and/or work with a qualified engineer to identify the anticipated flash flood depth for the site.

- c\*. Elevate all new HVAC and all critical equipment above the 2050s sea-level-rise-adjusted Design Flood Elevation (SLR-adjusted DFE) or above anticipated flash flood depths as determined by a qualified engineer.

If information about flash flood depth is unavailable, locate equipment on the building's roof or, at minimum, above grade.

Note that the 2050s SLR-adjusted DFE referenced throughout is established by the Climate Resilient Design Guidelines (CRDG) Version 4.1. While housing is typically identified as a non-critical facility in the CRDG, DFE may vary by facility criticality. For more information see the CRDG text.

- d\*. For new HVAC and any critical equipment that cannot be elevated, encapsulate equipment and/or dry flood-proof the flood-prone space to or above the level of the 2050s SLR-adjusted DFE or above the level of anticipated flash flooding as determined by a qualified engineer.

If information about flash flood depth is unavailable, protect all HVAC and critical equipment located below grade.

- e. New residential units may not be constructed below the 2050s SLR-adjusted DFE or below grade.

### REQUIREMENTS FOR FLOOD-PRONE BUILDINGS

\*For projects that cannot elevate new equipment, a waiver may be considered but flood-proofing will be required to the extent feasible.

Note that "Critical equipment" refers to electrical switchgear, fire pumps and sump pumps, emergency panels and generators, emergency communications and fire alarm equipment.

- f. Install backwater valves with containment tanks and/or ejector pumps in the lowest level of the building.
- 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 possible, 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.
- j. 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.
- i. Procure flood insurance for the property.
- j. Note that projects must also comply with Appendix G where applicable.

- a. Install flood sensors in all below-grade residential units and in any spaces where flooding is possible.
- b. Eliminate all residential uses that are below the 2050s SLR-adjusted DFE, are below grade and/or are below the level of anticipated future flash flooding.
- 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](#).

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

### 2.3 EXTREME HEAT Aligns w/ EGC 2.10 and 6.5

#### REQUIREMENTS

- 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 highly-efficient 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 without cooling, for buildings in high-heat neighborhoods, or for buildings that contain low-mobility populations.
- d. Install a cool roof or a cool roof coating.
- e. Minimize new hardscaping in favor of native species/drought-tolerant planted areas or open grid pavement.

#### REACH

- 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 without cooling, for buildings in high heat neighborhoods, or for buildings 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.

## 2.4 BACKUP POWER AND PASSIVE SURVIVABILITY\* Aligns w/ EGC 5.10

- a\*. For buildings that contain Senior Housing, provide backup power generation to at least one elevator
- b\*. For buildings that contain Senior Housing and that include (or can accommodate) a common or community space: 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.

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.

### REQUIREMENTS

\* Waivers available if this requirement is demonstrated to be technically or financially infeasible

- 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.
- b. Provide a “Place of Refuge” as described above, 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.

### REACH

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.

## SECTION 3 / HEATING, VENTILATION & AIR CONDITIONING

HPD's Retrofit Electrification Pilot can provide up to \$1 million for projects electrifying heating or hot water systems.

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.

Many measures in the section are eligible for significant incentives through HPD's Retrofit Electrification Pilot, the New York State Affordable Multifamily Energy Efficiency Program (AMEEP), the New York State Clean Heat Program, or NYSERDA'S Low Carbon Pathways Program.

### 3.1 HEATING SYSTEMS Points may be available through ECG 5.5 for electrification of Heating System

- a\*. The following systems, equipment, and appliances are required to convert to high-performance electric equipment meeting the performance standards outlined in Appendix A.
- Heating systems that use oil or electric resistance as a primary heating fuel
  - Steam heating systems that are being replaced or require extensive modification
  - Heating systems where equipment is located in basements and cellars in flood-prone buildings (as defined in Section 2) as a means to protect equipment from future flooding
- b\*. All heating systems and appliances are required to convert to high-performance electric equipment, meeting the specifications outlined in Appendix A.

For systems and equipment that receive an electrification waiver, design system to be Electric Ready, with the exception of emergency backup generators, per the guidelines in Appendix B.

- a. To reduce HVAC equipment size and utility costs, especially when electrifying systems, insulate above-grade walls to the maximum extent feasible or design building to a high-performance green building standard.
- b. Design the building to be All-Electric, including all commercial and laundry equipment (emergency generators are excluded from this recommendation).
- c. 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.
- d. Use equipments with efficiencies higher than Requirements.
- e. Incorporate Ground Source Heat Pumps where feasible.

REQUIREMENTS FOR SUB REHABS

REQUIREMENTS FOR GUT REHABS

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

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

REACH

### 3.2 COOLING

- a. See Section 2.3: Extreme Heat for requirements specific to certain project types and populations.
- b. All air conditioning 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, typically:
      - 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
    - 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.



**3.4 DOMESTIC HOT WATER SYSTEM** Points may be available through EGC 5.5 for compliance with this requirement

- a\*. 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.
- b. 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.
- c. 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.
- d. Insulate all new and accessible uninsulated heating/hot water piping and uninsulated service hot water tanks to current NYCECC requirements.

REQUIREMENTS

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

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

- a. Incorporate wastewater or drain-water heat recovery or ground source heat pumps into a project to the extent feasible.
- b. 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.

REACH

**3.5 VENTILATION** Aligns w/ EGC 7.7

- a. Install mechanical ventilation and demonstrate ventilation system flow rates are either within +/- 15 CFM or +/- 15% of design value. Use ASHRAE 62.1-2013 for common areas and ASHRAE 62.2-2013 for apartments.
- b. For buildings with existing mechanical ventilation: clean/seal and balance existing system, test to ensure code-compliant airflows, and right-size rooftop fans.
- c. Where applicable, provide timers, delay-off switches, or occupancy/humidistat sensors to local exhaust fans designed to provide intermittent ventilation.
- 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.

REQUIREMENTS

REACH

- a. 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.

### 3.6 SYSTEM COMMISSIONING

REQUIREMENTS

- 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.

## 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.

Requirements for this section are covered by the NYC Overlay of Enterprise Green Communities (EGC).

Selis Manor, Magnusson Architecture and Planning, PC



## 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.

Additional Requirements related to Health and Wellness are covered by the NYC Overlay of Enterprise Green Communities (EGC).

REQUIREMENTS

**5.1 ACTIVE DESIGN** Points may be available through EGC 7.11 for compliance with this requirement

- 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.

REACH

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

### 5.2 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 (NYSDOL).
- 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.

REQUIREMENTS

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

### 5.3 LEAD PAINT Aligns w/ EGC 7.2

- 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 [Local Law 1: NYC Lead Poisoning Prevention Law and Lead-Based Paint \(HPD\)](#), [Lead | US EPA](#), and [Office of Lead Hazard Control and Healthy Homes | HUD.gov](#)

## 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*.

Further information can be found at HPD Accessibility Guide.

#### REQUIREMENTS

## 6.2 AGE-FRIENDLY DESIGN

- a. Building owners to accommodate seniors and tenants with a disability upon request for any amenities needed within their apartment for comfort and safety i.e. kitchens & 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 [Aging in Place \(HPD\)](#) 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. This section is required for all Moderate Rehabs, which are not subject to third-party green building standards. Mod Rehabs voluntarily meeting EGC or LEED may skip this section.

Additional Requirements related to Building Operations are covered by the NYC Overlay of Enterprise Green Communities (EGC).

### 8.1 ELEVATORS

- a. Permits must be obtained for all elevator work. To obtain an elevator permit, a 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. Buildings 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

### 8.2 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  $\geq 1.5$  (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
<b>Resident-paid Heating &amp; Cooling</b> <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
<b>Owner-paid Heat; Resident-paid Cooling</b>	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
<b>Owner-paid Heating &amp; Cooling</b>	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/>
- 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](http://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.