



HCR SUSTAINABILITY GUIDELINES: NEW CONSTRUCTION

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**Homes and
Community Renewal**

Kathy Hochul, Governor
RuthAnne Visnaukas, Commissioner/CEO



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201 Ellicott / Braymiller Market: Buffalo, NY

NYSHCR CONTACTS

▶ **VP of Sustainability**

Samantha Pearce

641 Lexington Avenue, New York, NY 10022

(212) 872-0496

samantha.pearce@hcr.ny.gov

▶ **VP Design, Construction & Environmental Unit**

Kristy Whitcher

38-40 State Street, Albany, NY 12207

(518) 473-0457

kristy.whitcher@hcr.ny.gov

▶ **Director, Upstate Design Unit**

Vacant

38-40 State Street, Albany, NY 12207

Interim Contact: kristy.whitcher@hcr.ny.gov

▶ **Director, Downstate Design Unit**

Mark Warren

641 Lexington Avenue, New York, NY 10022

(212) 872-0647

mark.warren@hcr.ny.gov

▶ **Director, Construction Services Unit**

Joey Lindicy

641 Lexington Avenue New York, NY 10022

(212) 872-0417

joey.lindicy@hcr.ny.gov

INTENT OF GUIDELINES

HCR is working to put current and future affordable housing projects on the path to meeting New York State's Climate Leadership and Community Protection Act ("Climate Act"), which mandates at least a 40% reduction in greenhouse gas emissions by 2030 and at least 85% reduction by 2050, compared to New York State's 1990 carbon emission levels.

For buildings, this will mean dramatically improving building efficiency by enhancing the building envelope performance and removing or significantly reducing onsite carbon emissions from fossil-fuel burning appliances. HCR developed these Sustainability Guidelines as a step towards meeting the State's climate goals.

HCR's Sustainability Guidelines are designed to produce high quality housing across the State of New York to provide low-income tenants with improved health, safety and well-being.

The Guidelines include criteria that advance these goals including energy efficient building shells, systems and equipment, reduction or removal of fossil fuel based sources, increased indoor environmental quality and resiliency measures.

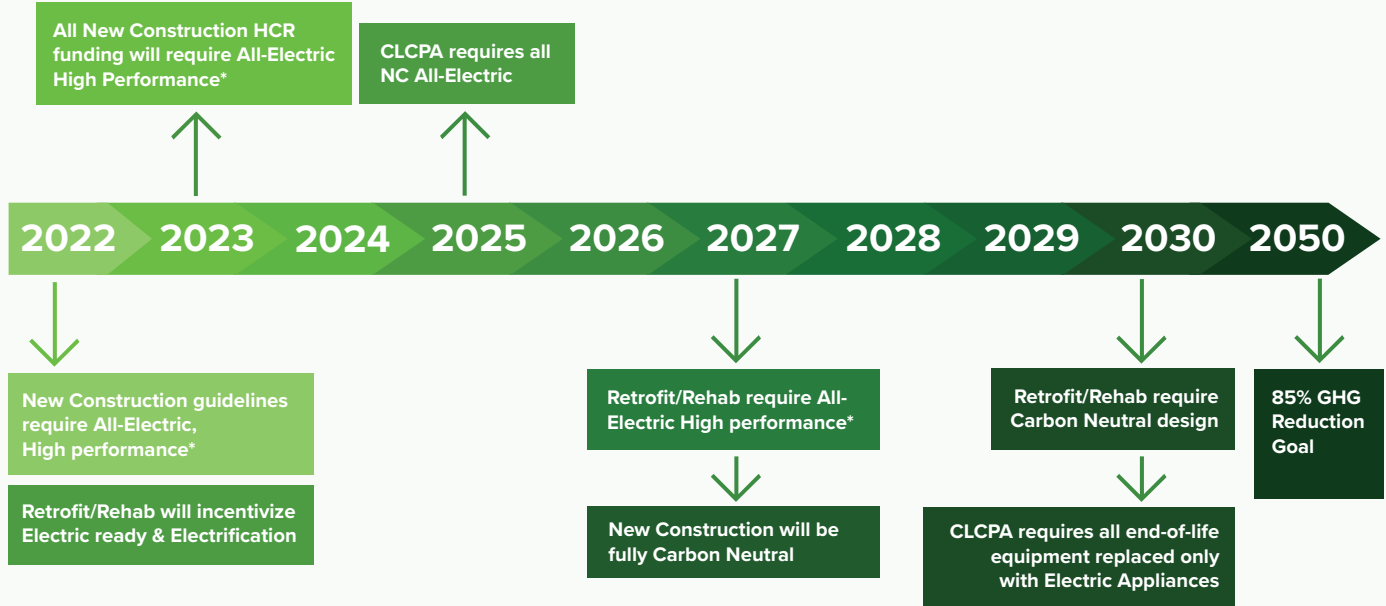


**New York State's goals
for Greenhouse Gas
Emissions Reductions**

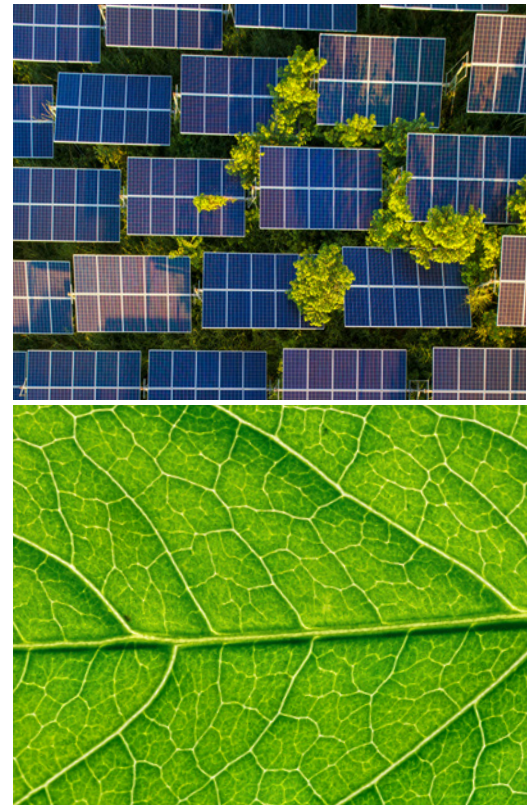
40% by 2030
85% by 2050

INTENT *Continued*

SUSTAINABILITY STANDARDS ROADMAP



Reduction or removal of fossil fuel based sources from buildings (i.e., electrification) not only aligns with the carbon-reduction goals of the CLCPA, it also has many benefits to tenants including reduced risk of fire, improved indoor air quality, and elimination of potential carbon monoxide exposure. In conjunction with electrification, it is imperative that buildings reduce their heating and cooling loads by addressing the efficiency of the building shell, which can reduce the energy demands of a building while dramatically improving comfort for tenants. HCR’s priority is delivering building envelopes that are well sealed and insulated, while also addressing the need for delivery of fresh air into spaces. Addressing these priorities can result in reduced operational costs and creation of living environments that are healthier and more comfortable to live in.



IMPLEMENTATION OF NEW YORK’S CLIMATE ACT IS ON TRACK AND MOVING FORWARD EXPEDITIOUSLY.











APPLICATION OF SUSTAINABILITY GUIDELINES

The **HCR Sustainability Guidelines** are applicable to certain projects applying for financing through HCR. The list of **Applicable Financing Programs** are outlined in this section. Projects shall follow the Sustainability Guideline section(s) that apply to their project based on the financing and construction type outlined in the Application Matrix below.

APPLICATION MATRIX

Applicable Financing Programs:

- Multifamily Finance 9% LIHTC RFP
- Multifamily Finance 4% HFA Tax-exempt Bond and Subsidy Financing
- Multifamily Finance Open Window CIF Stand-alone Financing

Project Type		New Construction Sustainability Guidelines	Existing Buildings Sustainability Guidelines	Preservation Guidelines: A Guidebook for Best Practices in Sustainability
Project applying for financing with HCR through Applicable Financing Programs	Residential New Construction			
	Residential Adaptive Reuse Rehabilitation			
	Residential Substantial/Gut Rehabilitation			
	Residential Moderate Rehabilitation			
	Mix of Residential New Construction and Residential Rehabilitation Buildings in Project	 Note 1	 Note 1	
	Mix of Residential New Construction and Residential Rehabilitation in a Single Building		 Note 2	
	Commercial and/or Community Service Facility	 Note 3	 Note 3	
Projects under regulation with HCR	Rehabilitation and/or Replacement work			

Footnotes

Note 1: Utilize Guidelines matching building scope for each building

Note 2: Follow Adaptive Reuse Guidelines

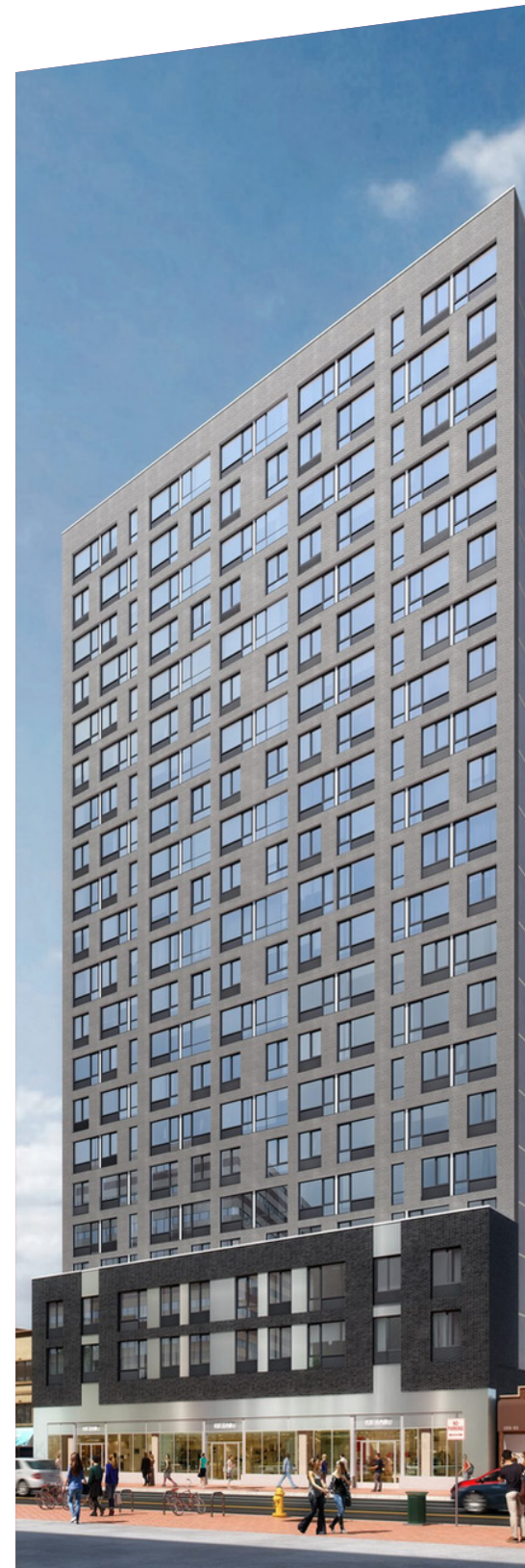
Note 3: Incorporate comparable energy efficiency strategies as those required for residential projects to achieve similar energy savings

APPLICATION *Continued*

CONSTRUCTION TYPES

The following construction types relate solely to the application of these Guidelines and shall not be used to define project requirements or scopes outside of the criteria defined in these Guidelines.

- **New Construction:** *Ground-up construction of a new building or buildings.*
- **Adaptive Reuse Rehabilitation:** *A substantial renovation that occurs in a building or space that undergoes a change of use to Residential occupancy, as defined by the applicable building code.*
- **Substantial Rehabilitation:** *A renovation where the majority of the interior walls, finishes, systems and MEP infrastructure are demolished and a new scope of work is constructed within the existing building shell. These projects are also sometimes referred to as “gut” rehabilitations.*
- **Moderate Rehabilitation Level 1:** *A renovation where the dwelling unit demising walls, most interior walls and MEP infrastructure remain, and the new scope of work is built within the existing dwelling unit compartment. This type of rehabilitation often includes replacement of fixtures, finishes and equipment (FF&E) and roofing. It may include window replacement, siding replacement and additional roofing scopes.*
- **Moderate Rehabilitation Level 2:** *A renovation where the dwelling unit demising walls and most of the interior walls remain. This type of rehabilitation includes many of the scoping items of a Level 1 Moderate Rehabilitation, but also includes replacement of mechanical, electrical and plumbing (MEP) infrastructure and equipment, either in part or in full.*



The Kira Apartments: Queens, NY

APPLICATION *Continued*

WAIVERS

Minor deviations from these requirements will be allowed via Design Waiver Request if necessary to avoid costly structural changes in rehabilitation projects or if they result in a superior design solution. Requests to waive a requirement will be reviewed on a case-by-case basis by the Vice President of Sustainability, the Vice President of the Design Construction & Environmental Unit (DC&E) and/or the respective DC&E Unit Director. Other offices of the Agency will be consulted when necessary. Evaluations of waiver requests will include the determinations of the appropriateness of the proposed alternative with emphasis on:

- Alignment with the HCR Sustainability Standards Roadmap
- Impacts on operating costs/efficiency
- Impact to the residents
- Cost-effectiveness
- Functional appropriateness
- Durability and operating appropriateness

All waiver requests must be submitted via the Design Waiver Request Form and must be received 30 calendar days prior to each required submission. The Design Waiver Request Form can be obtained online at <http://www.hcr.ny.gov>.

Potential applicants and design professionals needing technical assistance on the criteria outlined in these Guidelines should contact the HCR Sustainability Team, the Design, Construction & Environmental Unit, or the program managers of the applicable funding sources.

PROJECTS WITH NYC HPD INVOLVEMENT

All projects located within New York City that involve the City of New York Department of Housing Preservation and Development (HPD) funding, the more restrictive Guideline shall apply. All Sustainability Guideline criteria that is not met due to conflicts with the HPD criteria, must be presented to and approved by HCR as a Design Waiver Request.



500 Main Street Apartments: New Rochelle, NY

APPLICATION *Continued*

DESIGN COMMITMENT

To ensure that the design is coordinated with other applicable submission criteria and program requirements, project applicants and architects should also refer to publications applicable to the funding sources for the project. HCR publications can be obtained online at <http://www.hcr.ny.gov> or from applicable program staff.

A project's design and construction shall comply with and may not vary from what is represented in the application for funding unless a change is specifically directed or recommended by HCR. Constructed projects shall not be diminished in quality, including aesthetics, choice of materials, or systems from that proposed and represented in the application for funding unless specifically altered by HCR at award. The applicant is responsible for ensuring that the project's scope of work, as represented by the plans, specifications and other pertinent documents are well defined and coordinated with the cost estimate.

The Guidelines do not exclude compliance with other criteria that may be required by the project funding source(s) or required by applicable codes, laws or regulations.

Creekview Apartments: Canandaigua, NY





NEW CONSTRUCTION

The **HCR New Construction Sustainability Guidelines** are applicable to all New Construction Projects applying for financing with HCR under the Applicable Financing Programs. A list of the Applicable Financing Programs can be found in the Application of Sustainability Guidelines section of this booklet. New Construction Projects are defined as projects that include the ground-up construction of a new building or buildings. They can also include portions of a project that include new additions to existing buildings.

For projects that include a mix of New Construction and Rehabilitation, please see the *Application Matrix* included in this booklet.

STRUCTURE

SUSTAINABILITY

GUIDELINE REQUIREMENTS

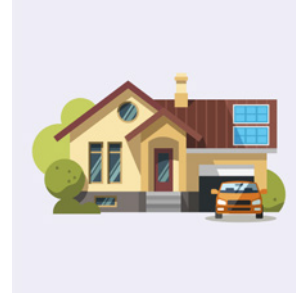
This booklet is divided into three sections:



Section 1:
Core Sustainability
Requirements



Section 2:
Building Performance
Requirements



Section 3:
Additional Sustainability
Requirements

Each section addresses a specific set of goals or standards that HCR has established as a baseline for all New Construction Projects to meet. These are referred to as **Baseline Requirements**. Each section also contains a number of **Stretch Goals** which all development teams are encouraged to meet, as they set the precedent for future baseline standards.

TERMINOLOGY: BASELINE REQUIREMENTS AND STRETCH GOALS

BASELINE REQUIREMENTS	STRETCH GOALS
<p>Baseline Requirements outline mandatory criteria that are required on every project.</p>	<p>Stretch Goals are not mandatory, but projects should consider all Stretch Goals outlined in this document unless meeting those goals proves to be cost prohibitive to the project. Stretch standards can be met in whole or in part, meaning a developer can choose to achieve some Stretch Goals in one section but not another. Competitive projects can receive additional points for achieving some or all of the stretch standards as outlined in the applicable RFP.</p>

STRUCTURE *Continued*

COMPLIANCE PATHS FOR NEW CONSTRUCTION SUSTAINABILITY GUIDELINES:

Section 1: Core Sustainability Requirements

Projects choosing to meet the **Baseline Requirements** in Section 1 must also comply with the **Baseline Requirements** in Section 2 and Section 3. Projects may choose to meet the **Stretch Goals** in any Section. Projects choosing to meet one of the **Stretch Goals** outlined in Section 1 automatically comply with Section 2 and can skip to Section 3.

Section 2: Building Performance Requirements

Projects that selected a **Baseline Requirement** in Section 1, will be required to meet the **Baseline Requirements** and may choose to comply with some or all of the **Stretch Goals** in this section. Projects that selected a **Stretch Goal** standard in Section 1, are already considered to be in compliance with this section.

Section 3: Additional Sustainability Requirements

All projects must comply with the **Baseline Requirements** in Section 3. Projects may choose to meet some or all of the **Stretch Goals** outlined in this section.

The graphic (below) illustrates the possible compliance paths for meeting the HCR New Construction Sustainability Guidelines.





SECTION 1

CORE SUSTAINABILITY REQUIREMENTS

Section 1 of the New Construction Sustainability Guidelines outlines core project requirements and eligible third-party certification programs that must be met by all projects.

At a minimum, projects must meet the all-electric standard and comply with one of the **Baseline Requirement** third-party certifications. Projects are encouraged to select a third-party certification from the **Stretch Goal** section, while still meeting the all-electric standard. Projects that commit to compliance with criteria listed in the **Stretch Goals** in Section 1 of these Guidelines shall be considered automatically in compliance with Section 2 and can skip directly to Section 3 of these Guidelines.

GENERAL CONSIDERATIONS

Code compliance takes precedence for all building systems and design. If a conflict exists between building/energy codes or HCR sustainability requirements, a design waiver should be requested from HCR.

Please be advised that energy code requirements and the corresponding energy efficiency strategy must be considered when planning a Project's development schedule. Projects will be responsible, without any additional cost to HCR programs, to comply with the applicable energy efficiency standard and all energy code requirements.

Nonresidential projects, or nonresidential spaces in a mixed-use project, shall incorporate comparable energy efficiency strategies as those required for residential projects to achieve similar energy savings.

Baseline Requirements:

- A. All Electric:** All projects must utilize high-performance all-electric heating/cooling and domestic hot water equipment and other in-unit or shared appliances such as dryers and cooktops, ovens or ranges, and;



Utica Crescent: Brooklyn, NY

SECTION 1 *Continued*

B. Third-party Standard Certification: Select one of the following third-party certification programs to certify the project to:

1. NYSERDA New Construction - Housing Program (NC-H)*
2. 2020 Enterprise Green Communities Certification
 - a. Projects in NYC should utilize the NYC overlay
3. LEED v4.1 Residential – Silver or higher
4. Well of Fitwel Building Certification
5. ICC/ASHRAE 700 – National Green Building Standard

**All projects applying for Multifamily Finance 4% HFA Tax-exempt Bond and Subsidy Financing are required to achieve this standard.*

Stretch Goals:

A. Third-party Standard Certification: Select one of the following third-party certification programs to certify the project in lieu of the programs listed in the Baseline Requirements:

1. LEED v4.1 BD&C Zero
2. 2020 Enterprise Green Communities Plus
3. Passive House PHI/PHIUS or equal

**Note: All projects choosing a Stretch Third-party Standard must still comply with the baseline All-Electric Requirement.*

Exceptions to All-Electric Requirement

Projects who can provide evidence to any of the following may, at HCR's sole discretion, be granted a waiver from the requirement to have all-electric heating/cooling and domestic hot water equipment:

- An electric load letter from grid demonstrating there is not sufficient electrical service to construct a new all-electric building.
- Use of on-site emergency back-up power generation with fossil fuel is acceptable; high-efficiency fossil fuel generators are permitted. Projects should provide a letter stating that onsite generators will only be used in no load tests/exercise and for emergency purposes when the electric grid power fails.



SECTION 2

BUILDING PERFORMANCE REQUIREMENTS

Section 2 applies to those projects who chose the **Baseline Requirements** compliance path in Section 1.

Projects that chose to commit to the **Stretch Goals** outlined in Section 1 are considered automatically in compliance with the **Baseline Requirements** and **Stretch Goals** outlined in Section 2, and should move on to Section 3.

A. APPLIANCES

This section applies to all cooking and clothes drying appliances included in the project.

Baseline Requirements: Projects must meet all the following requirements:

1. All refrigerators, dishwashers, and clothes washers included in the project or supplied by vendors must meet or exceed Energy Star or CEE Tier 1 certification where available. Commercial washing machines may be non-ENERGY STAR rated provided they meet or exceed the energy efficiency, quality, and reduced operational costs associated with ENERGY STAR rated appliances.
2. All ranges, cooktops, ovens and clothes dryers included in the project or supplied by vendors shall be all-electric. This provision extends to commercial and community kitchens.

Stretch Goals: Projects should consider incorporating the following into the project:

1. All appliances are Energy Star Most Efficient or CEE Tiers 2,3,4 or Advanced

B. LIGHTING

This section applies to all interior and exterior lighting fixtures and bulbs included in the project.

Baseline Requirements: Projects must meet all the following requirements:

1. All interior and exterior lighting shall be Energy Star Certified LED or provide the equivalent in energy savings and quality.
2. All exterior lighting fixtures shall be DarkSky approved or equal.



SECTION 2 *Continued*



The Corden: The Bronx, NY

3. All exterior lighting shall have either motion sensor controls, photosensors, or astronomic time-clock operation to limit lighting when there is adequate daylight.

Stretch Goals: Projects should consider incorporating the following into the project:

1. Living spaces and/or common areas shall be designed to optimize natural daylighting, minimize glare and minimize excessive heat gain during cooling months.
2. Interior common area lighting shall be controlled by occupancy sensors or automatic bi-level lighting controls. Exemptions are permitted in areas where 24-hour consistent light levels are required by code and in mechanical and utility rooms.
3. Integrated photovoltaic cells on exterior light fixtures.

C. BUILDING ENVELOPE

This section applies to the project's envelope, or the physical barrier between the conditioned and unconditioned environment of a building.

Baseline Requirements: Projects must meet all the following requirements:

1. Provide an energy model that demonstrates a building envelope that is 15% more energy efficient than NY State Energy Conservation Construction Code 2020, as applicable per project type.

Stretch Goals: Projects should consider incorporating the following into the project:

1. Provide an energy model that demonstrates a building envelope that is 30% than NY State Energy Conservation Construction Code 2020, as applicable per project type.

SECTION 2 *Continued*

D. HVAC

This section applies to the project's heating, ventilation and air conditioning systems. Please refer to each subsection for baseline requirements and stretch goals.

Heating and Cooling

Baseline Requirements: Projects must meet all the following requirements:

1. All HVAC equipment must be all high-efficiency, all-electric, and carry an ENERGY STAR certification or provide the equivalent in energy savings, quality and operational costs.
2. Equipment shall be either cold climate heat pumps with a COP of 3.5 or higher OR ground source heat pumps. Acceptable equipment includes equal to or better efficiency than the following (either ducted or ductless distribution):
 - a. Cold Climate Air Sourced Heat Pumps (ccASHP) including:
 - i. Variable Refrigerant Flow (VRF) with Heat Recovery (3-pipe system) when serving any interior habitable rooms (with no exterior wall exposure. When heat recovery (3-pipe) is not feasible, provide 2-pipe system with distinct zones for climate variations (E.G. North zone and South zone). Design of zones shall include analysis of unbalanced solar heat gains and internal heat gains considering exposure and potential occupant load to verify that conditions where simultaneous heating and cooling in a single zone would not be probable.
 - ii. Mini-split units
 - b. Cold Climate Water Source Heat Pumps (WSHP)

Notes: Alternate high-performance decarbonized solutions may be acceptable, at the sole discretion of HCR, if a proposer provides a waiver request and substantial justification to support an alternative HVAC system or design that supports decarbonization. Areas such as stair towers, and vestibules with no access to a central system can use lower efficiency electric heating components, such as electric resistance heating units, which should only be considered in limited quantities.

HEATING & COOLING TERMINOLOGY

COP (Coefficient of Performance):

Coefficient of Performance is the relationship between the power (kW) that is drawn out of the heat pump (cooling or heat), and the power(kW) that is supplied to the compressor.

Cold Climate Air-Source Heat Pumps (ccASHP): *Air-Source Heat Pumps* extract heat from the air (even cold air) and transfer that energy to indoor space through a reverse air-conditioning process.

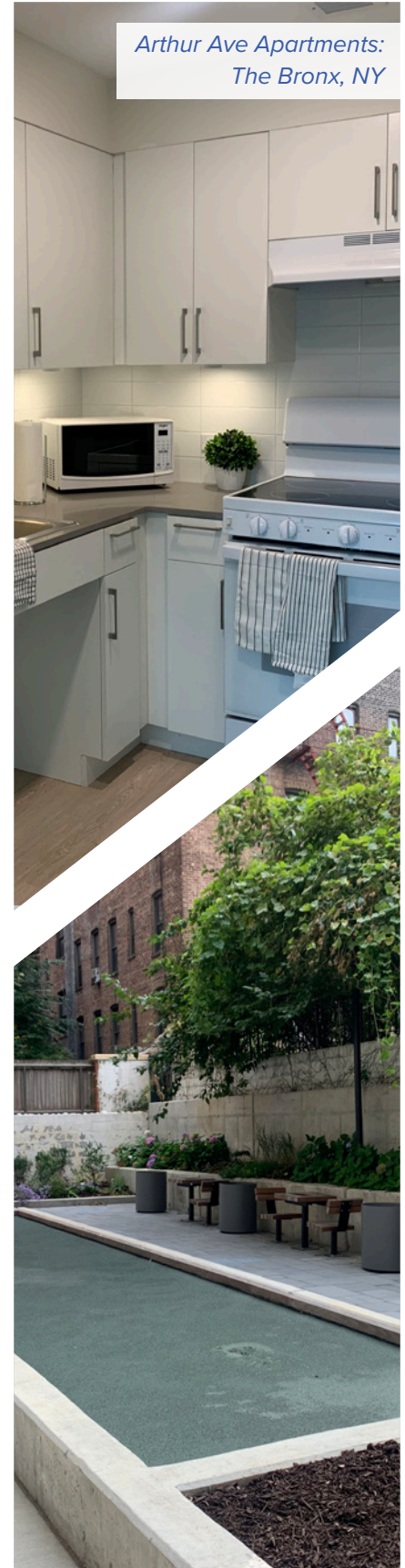
Ground Source Heat Pump (GSHP): *Ground Source Heat Pumps* transfer heat from the ground, as it is heated by the sun, even during winter months.



New York State is a leader in adopting clean heat and energy efficiency measures, committing more than \$6.8 billion to reduce the carbon footprint of New York's building stock.

SECTION 2 *Continued*

3. HVAC systems shall meet the following requirements as applicable:
 - a. System shall utilize compressor inverter technology efficiently at temperatures at/or above 0 degrees Fahrenheit, without reliance on electric resistance heat.
 - b. Electric resistance (within the heat pump unit) required at temperatures below 0 degrees Fahrenheit shall be tied to the VRF-HR system to limit operation above 0 degrees Fahrenheit.
 - c. Distribution systems must be designed to provide adequate conditioned heating/cooling to each habitable space within the dwelling unit.
 - d. VRF Multi-Split Air Conditioner and Heat Pump equipment must meet the Air Conditioning, Heating and Refrigeration Institute (AHRI) standard 1230 - 2021 with the AHRI label affixed to the equipment.
 - e. For central VRF-type systems, provide BACnet connection between the heating distribution systems to allow for monitoring capability of the temperature setpoints within units (control capability of in-unit set points is not required unless desired to satisfy this stretch goal).
4. HVAC systems shall meet the following design considerations as applicable:
 - a. Ducted systems should be used to the greatest extent feasible.
 - b. Surface mounted units, when used, are to be located in an inconspicuous area, out of primary sightlines in the dwelling unit.
 - c. Exterior mounted condensers shall be placed in a suitable inconspicuous location that does not interfere with exiting path used by the residents and is not directly visible through windows of dwelling units. If the condensers are roof mounted, the installation shall be such that it does not damage the roofing system nor detract from the exterior



SECTION 2 *Continued*

view of the building.

5. Thermostats shall meet the following requirements:
 - a. All apartments shall be treated as individual heating zones controlled by a wall-mounted programmable thermostat in each apartment capable of maintaining different temperature set points at different times of the day. In buildings with common heating systems, provide either programmable thermostats in each apartment or building system set-back controls, as allowable by the applicable building codes.
 - b. In common areas, remote wall thermostats accessible to the public should be in a locked enclosure and controlled by the building operations team.
6. All HVAC equipment should be commissioned prior to occupancy and all balancing/commissioning reports submitted to the project Energy Management Consultant as required for sign off.

Stretch Goals:

1. Provide central control capability of heating units through BACnet infrastructure or other equal.

Domestic Hot Water

Baseline Requirements: Projects must meet all the following requirements:

1. All projects must utilize high-efficiency electric domestic hot water systems. Acceptable domestic hot water systems include the following:
 - a. Heat pump water heaters
 - b. Sub-central electric water heaters with plants that provide distribution on a floor- by-floor basis where possible
 - c. In-unit electric instantaneous water heater

Exceptions: Project can demonstrate any of the “Exceptions to All-Electric Standard” listed in Section 1 of this booklet may be exempt from this requirement.



SECTION 2 *Continued*

Stretch Goals: Projects should consider incorporating the following into the project:

1. Solar thermal systems designed to pre-heat domestic hot water. These systems are often paired with heat pumps or instantaneous hot water heaters to bring water up to temperature.
2. Ground source heat pumps that either operate on their own or are in conjunction with heat pumps or instantaneous hot water heaters.

Ventilation

Baseline Requirements: Projects must meet all the following requirements:

1. Meet the ventilation criteria required by the third-party certification program in Section 1.

Stretch Goals: Projects should consider incorporating the following into the project:

1. Utilize Energy Recovery Ventilation (ERV) or Heat Recovery Ventilation (HRV) equipment that increases indoor air quality and efficiency in dwelling units and/or public spaces.
2. Proper Passive Ventilation: Utilize proper passive ventilation. Design the project to account for building mass, pressure differentials, and fresh air/natural ventilation (not just operable windows) to generate sufficient natural ventilation flows to reduce energy consumption and operate in whole or in part even during power outages. Advanced design should consider directing natural air flows through filtration systems.

E. WATER EFFICIENCY

Baseline Requirements: Projects must meet all the following requirements:

1. All fixtures listed below must be WaterSense certified or equal and no more than the following water flow rates by fixture type:
 - a. Toilets – 1.28 GPF, or dual flush (1.28 GPF max, 0.8 GPF min)
 - b. Showerheads – 2.0 GPM
 - c. Kitchen Faucets – 1.5 GPM (2.2 GPM max, 1.0 GPM min)
 - d. Bathroom lavatory faucets and all other fixtures in dwelling units – 1.0 GPM

Stretch Goals: Projects should consider incorporating the following into the project:

1. Utilize water fixtures that are more efficient than the baseline requirements listed above.
2. Incorporate grey water systems such as on-site filtration, grey water reuse for non-potable uses and water cisterns, where appropriate.



SECTION 3

ADDITIONAL SUSTAINABILITY REQUIREMENTS

Section 3 applies to all New Construction Projects. At a minimum, all projects are required to meet the **Baseline Requirements** for each category listed in Section 3. Although not required, projects should consider some or all of the **Stretch Goals** listed in Section 3.

A. INDOOR ENVIRONMENTAL QUALITY PRACTICES

Baseline Requirements: Projects must meet all the following requirements:

1. Low VOC Building Materials:

- a. All interior paints, coatings and primers shall have a VOC content less than or equal to the thresholds provided by the most recent version of SCAQMD 1113 available at time of product specification. VOC emissions shall be verified as compliant with CDPH Standard Method for all wall finish paints. All wallpaper shall be phthalate free.
- b. All interior adhesives and sealants shall have a VOC content less than or equal to the thresholds provided by the most recent version of SCAQMD 1168, available at time of product specification, for all interior adhesives and sealants.
- c. All flooring products must comply with CDPH emission requirements, including carpeting and hard surfaces. Flexible PVC with phthalates is prohibited, regardless of whether the phthalates were intentionally added or added via recycled content.
- d. Fiberglass or mineral wool batt insulation must be formaldehyde-free.
- e. Spray foam insulation shall be applied by applicators certified by the manufacturer, the American Chemistry Council, or other recognized industry standards. The application of spray foam shall be in accordance with such certification to limit harmful off-gassing after the curing period. Scheduling of spray foam applications shall be done in a manner that allows sufficient ventilation to occur to dissipate any residual off-gassing prior to the spray foam insulation becoming enclosed by other materials.



Alberta Place: Amherst, NY

SECTION 3 *Continued*



22 South West: Mount Vernon, NY

- f. Composite Wood in products such as cabinets and doors shall have formaldehyde emissions less than or equal to the thresholds provided by CARB Phase 2 and/or TSCA Title IV for plywood, particleboard and MDF. For any other composite wood products not covered by CARB/TSCA requirements, but used in interior spaces, these must at minimum be NAUF (have no added urea formaldehyde).

2. Integrated Pest Management:

All projects are to incorporate integrated pest management during construction that includes sealing all openings, cracks and joints to prevent the infestation of insect and animal pests from entering the building or migrating from one apartment or common area to another. After occupancy, the building management shall incorporate environmentally friendly pest management strategies and extermination practices that are safe for the health of the residents and the environment. A service contract or documentation should be provided as part of the project close out binder.

3. Ventilation Requirements – During and Post Construction:

In all dwelling units, seal all heating, cooling, and ventilation return and supply floor ducts and returns throughout construction to prevent construction debris from entering. Flush all dwelling units with a MERV 13 filter or better after completion of construction and prior to occupancy for either 48 hours or with at least 14,000 ft³ per ft² of floor area, then replace all air handling equipment filters.

B. SUSTAINABLE CONSTRUCTION PRACTICES

Baseline Requirements: Projects must meet all the following requirements:

1. Develop and implement a construction waste management

SECTION 3 *Continued*

plan that reduces non-hazardous construction and demolition waste through recycling, salvaging, or diversion strategies; maintain documentation on diversion rate for each selected strategy.

Stretch Goals: Projects should consider incorporating the following into the project:

1. Projects are encouraged to select one of the following advanced construction waste management strategies to pursue:
 - a. Provide a construction waste management plan that diverts at least 75% of construction waste away from the landfill; or
 - b. Implement a construction waste management plan such that the total construction waste sent to landfill or incinerator is less than 2.5 lbs/SF of building.

C. OPERATIONS:

Baseline Requirements: Projects must meet all the following requirements:

1. **Energy and Water Benchmarking:** Projects over 25,000 square feet, upload whole building (owner and tenant paid) energy and water performance data into online utility benchmarking platform annually and share with HCR. For details on HCR Benchmarking requirements see: <https://hcr.ny.gov/steps-hcr-benchmarking-program>
2. **Building Operations and Maintenance:** Provide HCR with a digital copy of an Operator's Manual prepared by the project's Energy Management Consultant that includes the following:
 - a. Overview of how mechanical systems are operated, including:
 - i. Ideal set points



SECTION 3 *Continued*

- ii. Summarized warranty information
 - iii. Retro commissioning reports
 - iv. Summarized mechanical systems manufacturers information. Please reach out to HCR if you require a sample document.
- b. Maintenance schedule/key contact for maintenance
- 3. Emergency Management Manual**
- a. Develop an Emergency Plan for building management and residents, including evaluation plans with specific instructions for a flood event, if applicable.
- 4. Resident Manual**
- a. List of sustainability features in the community spaces and resident units
 - b. Provide residents with key equipment manual information
 - c. Work order request process
 - d. Where applicable, control manuals with key set points
- 5. Training and Walkthroughs for Building Staff**
- a. Building operators should be present for system start up
 - b. General contractor should provide at least one mechanical systems on-site training with building management and operators prior to resident occupancy
- 6. Establishment of maintenance log for key building system** including but not limited to, when and who services equipment, including annual service and emergency repair/work.



2050 Grand Concourse: The Bronx, NY

The Rise: Brooklyn, NY

SECTION 3 *Continued*

D. SITE

Baseline Requirements: Projects must meet the following requirement:

1. Provide at least one Level 2 electric vehicle (EV) charging station for every twenty parking spaces provided in a project. EV charging stations shall be equitably distributed throughout the project to allow residents equal convenience in accessing the EV charging stations.
 - a. Projects shall not be required to provide more than five EV charging stations in total.
 - b. Projects that do not provide parking in a lot are exempt from this requirement.
2. Projects with individual driveways for dwelling units should provide a dedicated branch circuit that is not less than 40-ampere and 208/240-volt assigned for electric vehicle supply equipment terminating in a receptacle located adjacent to the driveway for EV charging capabilities.



Connecticut Court: Plattsburg, NY

Stretch Goals:

1. Provide at least one Level 2 electric vehicle (EV) charging station for every ten parking spaces provided in a project. EV charging stations shall be equitably distributed throughout the project to allow residents equal convenience in accessing the EV charging stations.
2. Sites should include considerations for raised planter beds to accommodate resident gardens. All resident gardens shall be located on an accessible route and include at least one accessible planting area. Resident gardens shall also be located in close proximity to a spigot for access to water.
3. Sites should include considerations for walking trails or other outdoor fitness areas for adults and adolescents.

E. SOLAR CONSIDERATIONS

HCR requires that all projects pursuing solar energy, or any other alternative energy sources must incorporate the design, operating cost and development cost assumptions associated with those measures into the project by the time an application is submitted for funding. Any changes to the energy



**New Yorkers
consume less total
energy per capita
than the residents
than all but two other
states, California and
Rhode Island.**

SECTION 3 *Continued*

efficiency strategy or green building practices after application submission will not be allowed.

Baseline Requirements: Projects must meet the following requirement:

1. All NYC projects must evaluate the project for solar feasibility. The solar feasibility study should include proposals for potential locations such as rooftops and other locations throughout the site, identification of preliminary solar components and basic electricity production estimates. The study should also include a cost benefit analysis, including the estimated payback period for the solar installation.

Stretch Goals: Projects should consider incorporating the following into the project:

1. All non-NYC projects should evaluate the project for solar feasibility. The solar feasibility study should include proposals for potential locations such as rooftops and other locations throughout the site, identification of preliminary solar components and basic electricity production estimates. The study should also include a cost benefit analysis, including the estimated payback period for the solar installation.
2. If solar photovoltaic systems (PV) are not included in the project, include solar ready design to allow for future installation of solar PV . Design considerations should include:
 - a. Panel Location and Orientation:
 - i. Space reserved on site or on building roof that is free of shade including trees, buildings and building parapets/penthouses.
 - ii. Potential for south-facing exposure for solar PV panel array.
 - b. Solar Ready Zones:



Energy Square: Kingston, NY

SECTION 3 *Continued*

- i. Solar-ready zones shall be designated on the roofs and comply with the provisions outlined in Section CA103.2-CA103.8 or Section RA103.2-RA103.8 of the 2020 Energy Conservation Construction Code of New York State, as applicable per project type.
 - ii. Roofing warranty shall allow for future installation of solar PV panels without voiding warranty.
3. Design the building with passive solar design principles including orientation and shading. Specifically consider the followings:
 - a. Shade buildings by incorporating landscaping elements.
 - b. Incorporate brise soleil or other architectural shading devices into the façade where appropriate.

F. RESILIENCY

This section applies to the project’s ability to adapt and provide protection from the adverse effects of climate change.

Baseline Requirements: Projects must meet the following requirements:

1. Conduct a resiliency assessment:
 - a. If pursuing Enterprise Green Communities certification, conduct a resiliency assessment equivalent to the assessment listed in criterion 1.6 “Resilient Communities: Multi-Hazard/Vulnerability Assessment.” Projects should demonstrate how the building is being designed to address the risks identified in the resiliency assessment.
 - b. If not pursuing Enterprise Green Communities certification provide a report and supporting narrative describing if applicable:
Applicable hazards to the project as identified on FEMA’s National Risk Index map (<https://hazards.fema.gov/nri/map>). Steps the project will take to mitigate the identified risks.
2. Elderly Projects (Senior Housing) and projects providing housing to Persons with Special Needs, in at least 50% of the dwelling units, must provide the following:
 - a. Adequate back up power generation to:
 - i. At least one elevator in the building (if applicable) that



Bayshore Residence: Islip, NY

SECTION 3 *Continued*

- incorporates resilient design features, and;
- ii. The building's water pump system to provide residents with potable water in the event of a power outage.
- b. A community room at least 15 square feet per resident in size that could serve as a shelter-in-place location for residents. The community room must include back up power generation to the following:
- i. Electrical outlets,
 - ii. At least one refrigerator, kitchen sink and microwave or range,
 - iii. At least one accessible bathroom,
 - iv. Heating and cooling, and
 - v. Domestic hot water

Projects may utilize either a solar energy system with battery storage or an efficient, low-emission generator to provide power. Fossil fuel back up power is exempt from the all-electric building requirement. Projects should document how long the backup power generation will be able to carry the loads selected and at time of CO, include copy of their refueling contract that includes provisions during periods of power outages.

Stretch Goals:

Projects should consider incorporating the following into the project:

1. For projects located in Urban Areas (UAs) as designed by the U.S. Department of Commerce, U.S. Census Bureau, design the project to mitigate the impacts of urban flooding.
 - a. **Enhanced Stormwater Management:** Urban flooding is defined as the inundation of stormwater infrastructure due to rainfall that overwhelms the capacity of the stormwater/ sewer systems. Projects should include additional stormwater management techniques



Bethany Terrance: Brooklyn, NY

SECTION 3 *Continued*

to reduce the volume of stormwater runoff and to mitigate unintended effects to the building and tenants during extreme weather scenarios. Projects should consider utilizing the USEPA Storm Water Management Model (SWMM) or the Green Infrastructure Flexible Model (GIFMod) to help inform enhanced storm water management.

- b. Building Design:** Buildings should be designed to mitigate the potential for stormwater damage or mitigate the loss of services to the building during extreme weather scenarios by incorporating one or more of the following strategies:
- i. Do not locate dwelling unit spaces below grade
 - ii. Elevate key mechanical, electrical and control gears above grade or flood proof any equipment that cannot be elevated.
 - iii. Install backwater control plugs in floor drains and backwater valves on house sewer lines.
2. Install sump pumps in the lowest levels of the basement floor, where applicable.
 3. Projects located in the 500-year floodplain or in levee-protected or dam breakage inundation areas should design the project as follows:
 - a. Locating key mechanical, electrical and control gears above the 500-year flood level or flood proof any equipment that cannot be elevated.
 - b. Utilize flood resistant construction for all areas below the 500-year flood level.
 - c. Locate habitable building space above the 500-year flood level.
 - d. Install backwater control plugs in floor drains and backwater valves on house sewer lines.
 - e. Install sump pumps in the lowest levels of the basement floor, where applicable.
 4. Projects should design buildings to **maximize active resiliency** by incorporating the following where feasible:
 - a. Renewable PV with battery storage or efficient fossil fuel backup generator to power critical loads. Project should select three or more of the following critical loads:
 - i. Heating systems
 - ii. Operation of water pumps if needed to make potable water available to occupants
 - iii. Lighting and Electric load
 - Plug load in common area spaces or offices
 - Adequate lighting for common area spaces for a shelter-in-place scenario



Elim Townhomes: Buffalo, NY

SECTION 3 *Continued*

- iv. Operation of a fan sufficient to provide emergency cooling if mechanical air conditioning equipment cannot operate
 - v. Ventilation systems
 - vi. Sufficient power for operation of critical medical equipment for residents
 - vii. Operation of cable modem and wireless router or other means of providing online access within the building, if applicable
 - viii. Operation of one elevator in building, if applicable
- b. Community Shelter or Place of Refuge:** include a common space designated as an emergency shelter area for building occupants, or formal place of refuge. Consider providing the following in the community shelter-in-place of refuge with back-up power generation to provide the following:
- i. Electrical outlets,
 - ii. At least one refrigerator, kitchen sink and microwave or range,
 - iii. At least one accessible bathroom,
 - iv. Heating and cooling, and
 - v. Domestic hot water
- c. Design the building with a rainscreen and windows that can withstand hurricane force winds and rain in coastal areas or special wind regions as defined in NYS Residential/ Building Code.
5. Where active resiliency is not utilized, projects should design buildings to **maximize passive survivability** in the event of an extreme weather event or power loss. Projects should incorporate the following considerations into the building design where feasible:
- a. Passive survivability of indoor spaces via highly-efficient building envelopes by maximizing the number of hours that a building stays within comfortable and survivable temperatures without heating or cooling equipment.
 - b. Natural ventilation techniques that allow fresh/filtered air ventilation to occur even in the event of power loss.
 - c. Maximize natural lighting so that living, common spaces and stairwells all use natural daylighting to the maximum amount feasible.



Fallkill Commons: Poughkeepsie, NY

Cover Photo Images (Clockwise):

Irondequoit Senior Apartments: Irondequoit, NY

Corbett Corner: Syracuse, NY

645 Main Street Apartments: Peekskill, NY

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