

SULLIVAN COUNTY LAND BANK CORPORATION

SUSTAINABLE CONSTRUCTION POLICY

Adopted February 20, 2020

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SECTION 1. PURPOSE AND AUTHORITY.

The purpose of this Policy on Sustainable Construction (the “Policy”) is to set forth the requirements applicable to the construction and renovation of real property. The Policy aims to help the Sullivan County Land Bank (SCLBC) implement best practices that will achieve the most cost-effective, energy efficient, healthy, climate resilient and operationally high performance housing structures possible. In regard to both renovation projects and new construction, the goal of SCLBC is to provide new or rehabilitated housing that incorporates sustainable building practices, techniques, materials, systems and finishes that decrease energy needs, eliminate fossil fuels, reduce heat island effects, and provide safe, healthy dwellings with particular attention to indoor air quality. SCLBC seeks to achieve a carbon neutral or carbon negative footprint in the building materials, mechanical systems and appliances in its construction projects, as part of Sullivan County’s commitment to meaningful climate action.

The Policy will undergo annual review by the Governance Committee and the Sustainable Building Advisory Group to account for the emergence of new materials and techniques, as well as revised building codes and energy efficiency requirements. Should a stipulation of this policy render a SCLBC project unfeasible, the Executive Director may authorize an exception, with board approval.

SECTION 2. DEFINITIONS.

As used herein, the following terms shall have the meaning set forth below.

- A. “Board” shall mean the Board of Directors of the Land Bank.
- B. “Chair” shall mean the Chair of the Board.
- C. “Executive Director” shall mean the Executive Director of the Land Bank, or in the event of a vacancy, the Chair.
- D. “Independent Contractor” shall mean a person, firm or corporation performing construction or related services for the Land Bank pursuant to a written agreement.
- E. “Real Property” shall mean lands, ands under water, structures and any and all easements, air rights, franchises and incorporeal hereditaments and every estate and right therein, legal and equitable, including terms for years and liens by way of judgment, mortgage or otherwise, and any and all fixtures and improvements located thereon.
- F. “Land Bank” or “SCLBC” shall mean the Sullivan County Land Bank Corporation.
- G. “Greenhouse Gases” or “GHG” shall mean gases that absorb and emit radiant energy within the thermal infrared range. Greenhouse gases cause the greenhouse effect. The primary greenhouse gases in Earth's atmosphere are water vapor, carbon dioxide, methane, nitrous

oxide and ozone. Human activities since the beginning of the Industrial Revolution (around 1750) have produced a 45% increase in the atmospheric concentration of carbon dioxide (CO₂), from 280 ppm in 1750 to 415 ppm in 2019. The vast majority of anthropogenic carbon dioxide emissions come from combustion of fossil fuels, principally coal, oil, and natural gas, with additional contributions coming from deforestation, changes in land use, soil erosion and agriculture (including livestock). Many conventional building materials used for insulation, structural integrity, cladding (siding) and window frames are either derived from petroleum products and/or utilize high amounts of energy to create (such as cementitious concrete, fiberglass and foam insulations).

- H. “Carbon Footprint” shall mean the greenhouse gasses emitted by extracting, producing, transporting, using and waste-treating materials. These embodied impacts are directly related to the types of materials chosen and the amount of materials required, which depends on the size of the building and various design choices.
- I. “Carbon Negative” shall mean the state in which both operational energy and material embodied energy are not emitting GHGs into the atmosphere. In this situation, the combined operational and materials GHG, added together, result in a negative carbon value, meaning that the building is sequestering more carbon than it is producing.
- J. “Carbon Neutral” or “Net-zero Carbon” shall mean the state of structures when they do not add carbon emissions to the environment.
- K. “Deep Energy Retrofit” shall mean a building retrofit approach that uses integrative design to improve the economics of efficiency and achieve much larger energy savings than conventional retrofits.
- L. “Energy Building Code” shall mean the NYS Energy Conservation Construction Code, a mandatory statewide code administered by the NYS Division of Building Standards and Codes (BSC).
- M. “Energy Star” shall mean the joint program of the US Environmental Protection Agency (EPA) and the US Department of Energy (DOE). Its goal is to help consumers, businesses, and industry save money and protect the environment through the adoption of energy-efficient products and practices. The ENERGY STAR label identifies top-performing, cost-effective products, homes, and buildings. The Home Performance with ENERGY STAR program combines DOE's research into residential energy use with ENERGY STAR's outreach capabilities to promote energy-efficient home retrofits. Energy Star certified homes feature comprehensive air sealing, insulation, and high-performance windows; high-efficiency Heating, Ventilation, and Cooling (HVAC) Systems; walls, roofs and foundations that prevent moisture damage; and energy-efficient lighting and appliances.
- N. “Enterprise Green Communities Criteria” shall mean the Enterprise standards that provide a comprehensive approach to affordable housing, with an emphasis on the health (especially respiratory and heart health) and comfort of building occupants. The 2020 Enterprise Green criteria address the following topic areas: Integrative Design, Location, Site Improvement, Water, Operating Energy, Materials, Healthy Living Environment, and Operations, Management and Resident Engagement;

- O. "Home Energy Rating System" or "HERS" shall refer to the rating system that assesses the energy efficiency of a home, assigning it a performance score. The U.S. Department of Energy has determined that a typical resale home scores 130 on the HERS Index while a standard new home typically scores 100. Ratings are conducted by certified independent home energy professionals who include exterior walls (both above and below grade), floors over unconditioned spaces (like garages or cellars), ceilings and roofs, attics, foundations and crawlspaces, windows and doors, vents and ductwork, HVAC systems, water heating system, and thermostats in the resulting HERS rating. HERS is a program of the Residential Energy Services Network, a non-profit membership corporation. The lower the HERS Rating, the greater the level of energy efficiency in the home.
- P. "Net Zero Energy" shall mean the state of a building with zero net energy consumption, meaning the total amount of energy used by the building on an annual basis is roughly equal to the amount of renewable energy created on the site, or in some definitions, by renewable energy sources located elsewhere, such as Community Generated Solar. Net-Zero design is achieved through careful siting to facilitate non-mechanical heating and cooling, robust air sealing, insulation and controlled ventilation. This results in affordable, right-sized renewable energy systems that work with the energy efficiency aspects of the design.
- Q. "Net-Zero Energy Ready" shall mean the state of a building when it is built to accommodate on-site renewable energy or to receive energy from an off-site renewable energy source in order to achieve Net Zero Energy status.
- R. "Construction" shall mean new home construction as well as major real property remodel or renovation, which refers to work that affects more than twenty-five percent (25%) of the building's square footage, and may include demolition down to the shell structure and reconstruction of new interior walls, ceilings, floor coverings and systems.
- S. "Sustainable Development Practices" shall mean a whole systems approach to the design, construction and operation of buildings and infrastructure that help to mitigate the negative environmental, economic, health and social impacts of construction, demolition, operation and renovation while maximizing the building's positive fiscal, environmental and functional contribution. Sustainable development practices recognize the relationship between natural and built environments and seek to minimize the use of energy, water and other natural resources while providing maximum benefits and contribution to service levels to the system and the connecting infrastructures. These practices recognize the value of ecological services provided by wetlands, forests, meadowland and other natural features that support clean water, healthy air quality, storm water management, and the mental health benefits of vegetative green space.
- T. "Light Pollution", also known as photo pollution, shall mean the presence of anthropogenic and artificial light in the night environment. It is exacerbated by excessive, misdirected or obtrusive use of light, but even carefully used light fundamentally alters natural conditions. Adverse consequences are multiple; some of them may not be known yet. Scientific definitions thus include the following: the degradation of photic habitat by artificial light; the alteration of natural light levels in the outdoor environment owing to artificial light sources; the alteration of light levels in the outdoor environment (from those present naturally) due to man-made sources

of light; the introduction by humans, directly or indirectly, of artificial light into the environment.

- U. “Ecological Restoration” shall mean the practice of renewing and restoring degraded, damaged, or destroyed ecosystems and habitats in the environment by active human intervention and action with the goal of creating a beautiful, resilient and predominantly native habitat in a designed landscape.

SECTION 3. RATIONALE

- A. In July 2019 New York State enacted the Climate Leadership and Community Protection Act, which sets ambitious goals for a carbon-free electricity system statewide by 2040 and a reduction of greenhouse gas emissions 85% below 1990 levels by 2050. These goals can be achieved through energy efficiency, deployment of renewable energy, and adoption of net-zero carbon building practices that sequester carbon in the built environment. The benefits include improved public health as well as cheaper, cleaner energy for all New Yorkers. As this will mean a likely revision of building codes, it is advantageous for SCLBC to lead the way in sustainable affordable housing and ensure that the houses it builds and renovates today are code compliant in the long run.
- B. Sullivan County, through its active efforts as a Bronze-certified Climate Smart Community and numerous Legislative resolutions and policies, has made a significant commitment to energy efficiency, GHG reduction, responsible materials management and a rapid transition to renewable energy in County-wide and community-wide operations.
- C. In securing funding for the SCLBC, the County made a commitment to adopt the Enterprise Green Communities sustainability standards for renovation projects and new construction.
- D. The Enterprise Green standards specify energy standards (Energy Star and Net-Zero Energy) and healthy building materials standards (avoidance of Red List materials and finishes) to provide housing that incorporates sustainable building practices, techniques, materials, systems and finishes that decrease energy needs, eliminate fossil fuels and combustion appliances, and provide safe, healthy dwellings with particular attention to indoor air quality.
- E. The health benefits and related cost savings of the elimination of combustion appliances and the use of verified “green” building materials and finishes have been documented and quantified by a variety of state and federal agencies and non-profit organizations including the New York State Department of Health, the US Department of Energy (DOE) and the National Renewable Energy Laboratory (NREL). The documented health benefits include reduced hospitalizations and emergency room visits relating to a variety of respiratory illnesses, improved blood pressure and reduced hypertension and fatigue. As a county that scores 61 out of 62 statewide in the annual Robert Wood Johnson county health rankings, Sullivan County has an opportunity to address public health improvements through sustainable building practices that enhance indoor air quality and eliminate known hazards and toxic building materials.
- F. In addition, thanks to new developments in building materials, the SCLBC has the opportunity to support Sullivan County’s GHG reduction goals and practice low carbon, low emissions

development in the housing sector by pursuing a net zero carbon or negative carbon footprint in the building materials specified for Land Bank projects, which will support meaningful climate action at minimal cost to the projects.

- G. These commitments will help ensure that SCLBC projects are well built and have lasting value in the community, contribute to the health and well-being of the families who live there, and help them save significantly on their operational and energy costs.

SECTION 4. SUSTAINABLE CONSTRUCTION MATERIALS AND PRACTICES

SCLBC projects will meet a minimum energy savings threshold of 50% better than the Energy Conservation Construction Code (published in 2015), with a target energy use intensity (EUI) of 9.5kBTU/net usable floor square foot/year or better. Each construction project will achieve Tier 3 incentives for the NYSERDA Low Rise Residential New Construction Program, which includes the following requirements: the as-built dwelling unit must achieve a HERS Index ≤ 10 , inclusive of installed solar PV; dwelling units with a conditioned floor area $>1,500$ S.F. must achieve a HERS Index ≤ 40 prior to inclusion of Solar PV; dwelling units with a conditioned floor area $\leq 1,500$ S.F. must achieve a HERS Index ≤ 50 prior to inclusion of Solar PV. Deep Energy Retrofits should ensure that this standard is achievable for renovation projects as well as for new construction.

Land Bank construction projects will include:

- Maximum effectiveness of the thermal envelope – walls, floor, foundation, ceiling and roof;
- Energy efficient, right-sized, non-fossil fuel Heating, Ventilation, Air Conditioning (HVAC) systems such as cold climate air source heat pump or geothermal technology;
- Energy efficient domestic hot water incorporated in the Air Source Heat Pump (ASHP) or Ground Source Heat Pump (GSHP) system;
- Energy Star labelled electrical no-combustion appliances and devices; appliances (ranges, cooktops, stoves, ovens, furnace, boiler etc.);
- Controlled mechanical ventilation for healthy indoor air;
- Moisture management, both interior humidity and migration through the building envelope;
- Water-conserving systems and fixtures;
- Outdoor lighting that is certified by the International Dark-Sky Association;
- Indoor lighting fixtures compatible with ENERGY STAR rated lighting options;
- Integration of “smart building” management systems and technologies;
- Use of non-toxic, non-VOC, non-APE/non-NPE materials, paints, sealants and finishes;
- Drainage and surface storm water management/drainage of water away from walls;
- Green demolition practices such as recycling, salvaging, repurposing of building materials, and a measurable goal for diversion from landfill expressed as a percentage of materials by weight/volume diverted from landfill.
- Ecological restoration practices when site work results in significant disruption to soil, plantings, and natural drainage patterns.

Required Materials and Finishes

SCLBC contractors will be required to adhere to these standards.

- VOC-free, APE-free paints, coatings, primers, finishes, sealants and adhesives;
- Formaldehyde-free composite wood products such as plywood, flooring, cabinetry and paneling;
- Environmentally preferred flooring, including non-vinyl products such as linoleum, ceramic tile, solid unfinished hardwood floors or pre-finished hardwood floors that meet the Scientific Certification System's FloorScore criteria;
- No carpets in building entryways, bathrooms, laundry rooms, kitchens or rooms built on foundation slabs; where carpets are used they must meet the Carpet and Rug Institute's Green Label or Green Label Plus certification for carpet, pad and carpet adhesives;
- Insulation: mineral wool, cellulose, hempcrete or hemp bats, and/or wood fiber insulative sheathing or expanded glass beads for sub-slab insulation;
- Roofing: High albedo Energy-Star certified roofing products;
- Recycled material—building materials composed of 25% post-consumer recycled content or at least 50% post-industrial recycled content wherever feasible;
- Paving: light colored, high-albedo driveway materials to reduce heat island effect, and/or open grid, permeable paving to reduce heat island effect and manage storm water drainage;
- Lumber sourced from Sullivan County sawmills to reduce carbon footprint of transportation with a preference for locally-sourced lumber; and
- Outdoor lighting designed to minimize light pollution.

Best practices

While not required, the following items will be shared in RFP and procurement documents and will be weighed when considering which contractor to work with.

- Carbon sequestering materials and techniques, including cellulose or hemp insulation, wood fiber insulative sheathing, advanced framing techniques and all wood construction;
- Renewable energy (solar PV, solar hot water), and power system resiliency through battery backup or other strategies, where feasible; Ventilation/mechanical exhaust ASHRAE 62.2-2010 or better rating;
- Radon testing, passive radon-resistant features below slab and active radon systems as needed, according to the ANSI-AARST Standard;
- Integrated pest management including non-toxic caulks and sealants to prevent pest entry;
- Universal Design elements as appropriate, which are: Equitable Use (the design is useful and marketable to people with diverse abilities); Flexibility in Use (the design accommodates a wide range of individual preferences and abilities); Simple and Intuitive Use (use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level); Perceptible Information (the design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities); Tolerance for Error (the design minimizes hazards and the adverse consequences of accidental

or unintended actions); Low Physical Effort (the design can be used efficiently and comfortably and with a minimum of fatigue); Size and Space for Approach and Use (appropriate size and space is provided for approach, reach, manipulation, and use, regardless of user's body size, posture, or mobility);

- SCLBC will work with Contractors to prepare a Homeowner's Manual that explains the systems in the house and provides information on their proper use and maintenance; and
- Contractors and builders should reference building standards including: Energy Star single family home standard; Net-Zero Energy/Net Zero Energy Ready; Passive house Institute (PHI); Passive House Institute US (PHIUS); Living Building Challenge

Red List

Red List materials are materials that are prohibited from use in SCLBC construction projects due to their potential toxicity. Red-listed materials are known to pollute the environment, create unhealthy indoor air, harm construction and manufacturing workers, and bio-accumulate in the food chain. Informational sources include the Enterprise Green Community Criteria; the Materially Better red list of the International Living Future Institute; Harvard's T.H. Chan School of Public Health Healthy Buildings Initiative; and the Healthy Buildings Network. Red listing of materials is based on the materials' levels of asbestos, Chlorinated Polyethylene and Chlorosulfonated Polyethylene, Formaldehyde (added), lead (added), mercury, polychlorinated biphenyls (PCBs), perfluorinated chemicals (PFCs), Volatile Organic Compounds (VOCs), Alkylphenol ethoxylates (APEs) and other components known to harm human health. Materials and practices not to be used in SCLBC projects:

- Spray foam insulation
- Foam board (poly-isocyanurate)
- Styrofoam board
- Fiberglass insulation
- Flexible vinyl flooring containing phthalates
- Vinyl wall coverings (PVC) containing phthalates
- Composite wood materials containing formaldehyde
- Materials containing/emitting PCBs, VOCs, APEs, per- and polyfluoroalkyl substances (PFAs), polycyclic aromatic hydrocarbons (PAHs), lead, flame retardant chemicals, chemical antimicrobials (Triclosan or Triclocarban)

SECTION 5. VERIFICATION AND DOCUMENTATION

Energy: Each project will achieve Energy Star Tier 3 incentives for the Low Rise Residential Program. This process will include Energy Star third party rating and generate a HERS Index rating.

Materials: The Project Construction Manager will be responsible for inspections and documentation demonstrating that sustainable building practices have been implemented. In particular, the Construction Manager will verify that the required materials and finishes have been used and that Red List materials have not been used.