

# Green Development Questionnaire Workbook

## Introduction

The following workbook is designed to help Manhattan Community Board 3 members better understand and utilize the Green Development Questionnaire. Specifically, this document explains the components of the Green Building Certifications table. This will aid in determining the thresholds the Board may want to set before giving the questionnaire to a developer, or how to decipher the meaning of answers after developers have completed it.

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## LEED (Leadership in Energy and Environmental Design)

**Certification:** LEED (Leadership in Energy and Environmental Design) is the most widely used green building rating system in the world. Available for virtually all building types, LEED provides a framework for healthy, highly efficient, and cost-saving green buildings.

**How it works:** To achieve LEED certification, a project earns points by adhering to prerequisites and credits that address carbon, energy, water, waste, transportation, materials, health and indoor environmental quality. Projects go through a verification and review process and are awarded points that correspond to a level of LEED certification: Certified (40-49 points), Silver (50-59 points), Gold (60-79 points) and Platinum (80+ points).<sup>1</sup>

**Implications:** Being LEED certified means a building is using less energy and water, avoiding waste, saving on maintenance costs, improving indoor air quality, offering comfort to its occupants, enhancing health and wellness, and creating less environmental burden on its community.

**Score impacts:** The higher a developer scores in the following “credit categories,” the more points they earn and the higher certification they receive (i.e. certified, silver, gold, etc.).

- Integrative process
- Location and transportation
- Sustainable sites
- Water efficiency
- Energy and atmosphere
- Materials and resources
- Indoor environmental quality
- Innovation

See [here](#) for complete list of available credits.

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<sup>1</sup> <https://www.usgbc.org/leed>

## ENERGY STAR

**Certification:** ENERGY STAR certified buildings save energy, save money, and help protect the environment by generating fewer greenhouse gas emissions than typical buildings. To be certified as ENERGY STAR, a building must meet strict energy performance standards set by EPA. This certification focuses solely on energy efficiency.

**How it works:** to be eligible for ENERGY STAR certification, a building must earn an ENERGY STAR score of 75 or higher on EPA's 1 – 100 scale, indicating that it performs better than at least 75 percent of similar buildings nationwide. This 1 – 100 ENERGY STAR score is based on the actual, measured energy use of a building and is calculated within EPA's ENERGY STAR Portfolio Manager tool. The score accounts for differences in operating conditions, regional weather data, and other important considerations. Learn more about [how the 1 – 100 ENERGY STAR score is calculated](#).<sup>2</sup>

**Implications:** ENERGY STAR buildings have lower utility bills, generate 35% fewer greenhouse gas emissions, and are well positioned to respond to benchmarking and performance mandates.<sup>3</sup>

**Score Impacts:** EPA's 1 - 100 ENERGY STAR score is an external benchmark for assessing the performance of commercial buildings. The ENERGY STAR score, expressed as a number on a simple 1 - 100 scale, rates performance on a percentile basis: buildings with a score of 50 perform better than 50% of their peers; buildings earning a score of 75 or higher are in the top quartile of energy performance. See more details about the Portfolio Manager [here](#).

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<sup>2</sup> [https://www.energystar.gov/buildings/building\\_recognition/building\\_certification](https://www.energystar.gov/buildings/building_recognition/building_certification)

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[https://www.energystar.gov/buildings/building\\_recognition/building\\_certification/reasons\\_get\\_certified](https://www.energystar.gov/buildings/building_recognition/building_certification/reasons_get_certified)

## Enterprise Green Communities

**Certification:** Enterprise Green Communities is the only national green building program created with and for the affordable housing sector specifically.

**How it works:** To become certified, developers must meet all required mandatory and optional requirements as outlined in the [criteria](#) document. If development is financed by HPD, the process found on [HPD's website](#) regarding the Enterprise Green Communities Criteria must be followed.

**Implications:** The construction and operations of these certified green buildings will reduce carbon emissions, energy and waste, conserve water, prioritize safer materials, and lower tenants' exposure to toxins.

**Score impacts:** All mandatory elements of the criteria must be met. The higher the amount of optional points achieved, the more green development standards the development has adhered to. The criteria encompasses the following categories:

- Integrative design
- Location & neighborhood fabric
- Site improvement
- Water
- Operating energy
- Materials
- Healthy living environment
- Operations, maintenance, and resident engagement

See [here](#) for the complete (NYC overlay) criteria checklist.<sup>4</sup>

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<sup>4</sup> <https://www.greencommunitiesonline.org/>

# BREEAM (Building Research Establishment Environmental Assessment Methodology)

**Certification:** BREEAM (Building Research Establishment Environmental Assessment Methodology) measures sustainable value in a series of categories, ranging from energy to ecology. Each of these categories addresses the most influential factors, including low impact design and carbon emissions reduction, design durability and resilience, adaption to climate change, and ecological value and biodiversity protection.

**How it works:** The main output from a certified BREEAM assessment is the rating. A certified rating reflects the performance achieved by a project and its stakeholders, as measured against the standard and its benchmarks. The BREEAM ratings range from Acceptable (In-Use scheme only) to Pass, Good, Very Good, Excellent to Outstanding and it is reflected in a series of stars on the BREEAM certificate.

**Implications:** BREEAM certification helps clients manage and mitigate risk through demonstrating sustainability performance during planning, design, construction, operation or refurbishment.

**Score impacts:** The following categories are evaluated in the BREEAM rating process:

- Energy
- Health and wellbeing
- Innovation
- Land use
- Materials
- Management
- Pollution
- Transport
- Waste
- Water

Each category is sub-divided into a range of assessment issues, each with its own aim, target and benchmarks. When a target or benchmark is reached, as determined by the BREEAM assessor, the development or asset score points, called credits. The category score is then calculated according to the number of credits achieved and its category weighting. Once the development has been fully assessed, the final performance rating is determined by the sum of the weighted category scores.<sup>5</sup>

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<sup>5</sup> <https://www.breeam.com/discover/how-breeam-certification-works/?cn-reloaded=1>

## Green Globes

**Certification:** Green Globes is a comprehensive, science-based building rating system that supports a wide range of new construction and existing building project types. Designed to allow building owners and managers to select which sustainability features best fit their building and occupants, Green Globes certifies projects that meet at least 35% of the 1,000 points that are deemed applicable to the project.

**How it works:** In order to become certified, a developer must work with a Green Globes Assessor who will complete third-party assessments. The developer will then receive a final report containing your Green Globes rating and certificate.

**Implications:** Environmental objectives pursued through Green Globes lead to lower energy and water bills, reduced emissions, optimized health and wellness benefits, and minimized waste.

**Score impacts:** After the final assessment is verified, properties achieving a score of 35% or higher receive a Green Globes rating based on the percentage of total points achieved (up to 1000). The rating are as follows:

- Four Green Globes: 85-100%. Demonstrates world-class leadership in resources efficiency, reducing environmental impacts, and improving occupant wellness.
- Three Green Globes 70-84%: Demonstrate outstanding success in resource efficiency, reducing environmental impacts, and improving occupant wellness.
- Two Green Globes: 55-69%: Demonstrates significant achievement in resource efficiency, reducing environmental impacts, and improving occupant wellness.
- One Green Globes: 35-54%: Demonstrates a strong commitment to resource efficiency, reducing environmental impacts, and improving occupant wellness.<sup>6</sup>

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<sup>6</sup> <https://thegbi.org/green-globes-certification/how-to-certify/>

## Living Building Challenge

**Certification:** Living Buildings are regenerative buildings that connect occupants to light, air, food, nature, and community. They are self-sufficient, remain within the resource limits of their site, and create a positive impact on the human and natural systems that interact with them. They generate more energy than they use, capture and treat all water on site, and are made using healthy materials.

**How it works:** The Living Building Challenge focuses on seven performance areas, called “petals”:

- Place
- Water
- Energy
- Health and happiness
- Materials
- Equity
- Beauty

Each Petal is subdivided into Imperatives, for a total of twenty Imperatives in the Challenge. The Imperatives can be applied to almost every conceivable building project, of any scale and any location—be it a new building or an existing structure.

**Implications:** The Living Building Challenge completely transforms the way the built environment is created and eliminates any negative impact on global health. It removes barriers to systemic change, and realign incentives to truly protect the health, safety and welfare of people and all beings. In addition, it reconciles the built environment with the natural environment to create greater biodiversity, resilience and opportunities for life. You can explore case studies [here](#).

**Score impacts:** No score, a building either is a “living building” by meeting all requirements, or not. (However, many of the Imperatives have temporary exceptions to acknowledge current market limitations. These are listed in the Petal Handbooks, which should be consulted for the most up-to-date rulings. Temporary exceptions will be modified or removed as the market changes.)<sup>7</sup>

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<sup>7</sup> <https://living-future.org/lbc/basics4-0/#what-does-good-look-like>

## National Green Building Standard (NGBS)

**Certification:** The National Green Building Standard (NGBS) is the only green building rating system for homes and apartments approved by the American National Standards Institute (ANSI), as an American National Standard. The NGBS provides a blueprint for builders to follow for the design and construction of new and renovated single-family homes and multifamily apartment buildings.

**How it works:** A home or multifamily building can attain one of four performance levels — Bronze, Silver, Gold, or Emerald. For a building to attain any level of NGBS Green certification, all of the applicable mandatory provisions must be correctly implemented. The certification focuses on the following categories: energy efficiency, water efficiency, resource efficiency, lot development, operation & maintenance, and indoor environmental quality.

**Implications:** A building that adheres to the NGBS standards will reduce carbon emissions, energy and waste, conserve water, prioritize safer materials, and lower tenants' exposure to toxins.

**Score impacts:** The impacts of each of the four performance levels (Bronze, Silver, Gold, or Emerald) can be seen on the graph on [NGBS's website](https://www.ngbs.com/the-ngbs-green-promise).<sup>8</sup>

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<sup>8</sup> <https://www.ngbs.com/the-ngbs-green-promise>



## Glossary

**Base Flood Elevation (BFE):** The level of surface water anticipated to be reached in an area during a base flood. “Base flood” refers to a flood that has a one percent chance of being either equaled or exceeded in a given area in a given year.<sup>9</sup>

**Daylight sensors:** Daylight sensors work to retain the same level of brightness in an area by decreasing the LED light output and augmenting it with natural light. This reduces energy consumption.

**Ecosystem services/landscape:** Ecosystem services are the direct and indirect contributions of ecosystems to human well-being. Services include: provisioning services, regulating services, supporting services, and cultural services. See more [here](#).

**Heat Vulnerability Index (HVI):** The New York City (NYC) Heat Vulnerability Index (HVI) is a measure of how the risk of heat-related illness or death differs across neighborhoods. See NYC HVI [here](#).

**Multi-hazard/vulnerability assessment:** A systematic approach to identifying hazards or risks that are most likely to have an impact on a development and the surrounding community.

**Smart meter:** A smart meter is an electronic device that records information such as consumption of electric energy, voltage levels, current, and power factor.

**Submeters:** These devices installed within a facility can collect interval and consumption data to shed light on when and how much power and energy are used.<sup>10</sup>

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<sup>9</sup> [https://www.kin.com/glossary/base-flood-elevation#:~:text=A%20base%20flood%20elevation%20\(BFE,area%20in%20a%20given%20year.](https://www.kin.com/glossary/base-flood-elevation#:~:text=A%20base%20flood%20elevation%20(BFE,area%20in%20a%20given%20year.)

<sup>10</sup> <https://affinityenergy.com/what-are-submeters/>

## Acknowledgements

Workbook created by [Maia Roseval](#), Community Planning Fellow at the Fund for the City of New York.