

Morristown Sustainable Development

Green Building Guidelines – A Checklist

As a participating community of Sustainable New Jersey, Morristown developed a user-friendly set of guidelines to help achieve its commitment to making Morristown a more healthy and sustainable place through strategies that reduce greenhouse gas emissions, more effectively manage water and energy resources, and create more livable communities. In addition, these Green Building Guidelines satisfy various good government objectives stated in Morristown's 2014 Master Plan, such as *Objective 6.2 – Streamline and strengthen the permitting, compliance review, and code enforcement process.*, **Morristown Moving Forward**, which encouraged streamlining and Morristown's permitting, compliance review, and code enforcement process. Implementation of this strategy represents **Morristown Moving Forward** toward achieving its vision of being "*the most welcoming, beautiful, healthy, resilient, and sustainable place to live, work, and play in New Jersey*".

These Green Building Guidelines are created as a checklist for architects, engineers, planners, developers, and builders to apply to their design and construction proposals. A completed copy of this checklist shall be submitted along with all Major Site Plan or Subdivision applications for which approval is sought from the Town's Planning or Zoning Boards. This checklist may be optionally submitted along with applications for Minor Site Plans, façade alterations and minor subdivisions.

The following Green Building Guidelines are simple and easy measures. The checklist does not create new zoning standards or other legal requirements upon Applicant's submitting development proposals before Morristown's land use boards. Rather, the items in this checklist are to be considered a collection of best practices identified by the Town's Planning Division. These items were extracted from various national green certification programs, and selected because they describe smart and sustainable methods of designing and constructing quality, efficient, durable, and marketable buildings and sites. Applicants may elect to include one or all of the following items in their development proposal as a way to demonstrate compliance the Town's 2014 Master Plan, such as *Objective 3.2 – Promote sustainable building practices.*

Beyond smart design and construction methods, another objective of these Green Building Guidelines is to promote new job and business opportunities in the "Green Collar" business sector. With increased jobs and business opportunities in green construction trades, maintenance and repair, supplies, and materials, Morristown's Green Building Guidelines provide an important opportunity to both advance our commitments to improving the physical and economic health of our town, as well as to environmental and climate protection at the local, regional, and global scale of which we are a part.

Did you...?

The checklist is designed with a series of actions for you to ask yourself if it applies to your project. Did you consider it and use it as part of the design and construction of your project? If yes, simply circle the actions that you did incorporate into your project. There is also a resource section at the end of this document to provide additional assistance and guidance.

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LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN

Did you...

1. Design the project to meet or exceed baseline certification requirements under one of the USGBC LEED rating systems?
<http://www.usgbc.org/certification>
2. As an alternative, for residential projects only, design the project to meet baseline Enterprise Green Communities Criteria certification?
<http://www.enterprisecommunity.com/resources/ResourceDetails?ID=67453.pdf#>

If you answered yes to one of the above, you do not need to complete the remainder of the checklist.

SITE SUSTAINABILITY AND PRESERVATION

Did you...

1. Conduct an Environmental Site Assessment (ESA) that meets the requirements of the NJ DEP for preliminary assessments.
2. Implement local or state erosion and sedimentation controls during construction, and use the EPA's Sediment and Erosion Control Best Management Practices. (Also see EPA's Low Impact Development guidelines).
3. Implement local or state storm water management requirements, and use the EPA's Storm Water Management Best Practices. (Also see EPA's Green Infrastructure guidelines)
4. Design landscaped areas, select native trees and plants indigenous to the region, preserve existing mature trees whenever possible, add mulch or soil enhancement as appropriate; install on-site deciduous trees or shrubs at areas prone to solar gain whenever possible; install water efficient, such as drip systems, timers, and/or other water efficient systems, for irrigation.
5. Limit turf areas and use only drought tolerant turf or other ground covers and plant materials that do not require chemical inputs and significant mowing.
6. Minimize impervious surfaces through the use of gravel, permeable pavers, etc.
7. Select and install street trees (or preserve existing, if possible) to shade at least 50% of sidewalks.

WALKABLE AND BIKABLE NEIGHBORHOODS

Did you...

1. Design the project such that all of the following are achieved:
 - a. A principal functional entry of each building has a front façade that faces and addresses a public space such as a street, square, park, or plaza.
 - b. Continuous public sidewalks or equivalent provisions for walking are provided along all streets adjacent to the project site.
 - c. Parking garages are located and designed to have minimal visual impact from public streets and open spaces.
 - d. Building accommodates bicycles and bicycle facilities, such as covered and secured bike racks within the building or site.
 - e. Exterior lighting is sufficient to achieve safety and comfort and is designed to prevent night sky pollution and off-site lighting. *(Reference for lighting densities and controls: ANSI/ASHRAE/IESNA Standard 90.1-2007 with Addenda).*
2. Other neighborhood development measures to consider in your project:
 - a. No blank walls (without doors or windows) longer than 50 feet occur along sidewalks. Walls with public art installations such as murals may be exempted.
 - b. Any ground-level storefront windows are kept visible at night.
 - c. Transportation choices and alternatives are offered, such as shuttles service, car share program, other.
 - d. Project is located within walking distance (1/4 mile) to local and regional mass transit systems, such as bus or train.

ENERGY EFFICIENCY

Residential Projects

Did you...

1. Use an Energy Star Certified Home Energy Rater in the design process.
1. Use Energy Star Qualified Homes:
 - Builder Option Package for IECC Climate Zone 4;
 - Thermal By-Pass Inspection Checklist
 - Energy Star Advanced Lighting Package
2. Install Energy Star labeled windows.
3. Install Energy Star labeled appliances.
4. Install Energy Star labeled ceiling fans in bedrooms and family rooms.
5. Install exterior vented Energy Star labeled fans in all bathrooms.
6. Install exterior vented Energy Star kitchen cooking range exhaust fan.

7. Install individual or sub-metered electric meters for each unit.
8. Install Energy Star or high-efficiency fixtures in all common areas.
9. Install Energy Star light fixtures at primary switch in kitchen and bathroom, and install Energy Star fixtures and bulbs throughout unit interior. Install Energy Star light fixtures in basement, garage, closets and/or storage areas.
10. Install motion sensors in selected areas, such as closets, bathrooms, hallways.
11. Install outdoor fixtures with daylight sensors, photocells, or timers.
12. Install water distribution system that minimizes distances between heated water source and faucets, consolidates water lines within a minimum of "water walls". Not install lines on exterior walls. Insulate all hot water lines, and cold lines in unconditioned spaces.
13. **Design and install heating/ ventilation/ air-conditioning (hvac) system with certified Energy Star Home Energy Rater (ACCAM Parts J and S) to ensure whole-house design that incorporates solar orientation, climate zone, window size and placement, room volume, building envelope and insulation value.**

ENERGY EFFICIENCY

Non-Residential Projects

Did you...

1. Design the building envelope and systems to achieve one of the following baselines:
 - a. Comply with the prescriptive measures of the ASHRAE Advanced Energy Design Guide appropriate to the project.
 - b. Improve building performance by 5% above the baseline performance method in Appendix G of ANSI/ASHRAE/IESNA Standard 90.1-2007 (with errata but without addenda).
 - c. Comply with the prescriptive measures identified in the Advanced Buildings Core Performance Guide developed by the New Buildings Institute.
2. Not use any chlorofluorocarbon (CFC)-based refrigerants in new base building heating, ventilating, air conditioning and refrigeration (HVAC&R) systems. Or, if reusing existing base building HVAC equipment, complete a comprehensive CFC phase-out conversion prior to project completion.

Other ENERGY EFFICIENCY Green Building Choices:

1. Install thermal comfort system controls as individualized or zoned, as possible.
2. Install lighting control systems as individualized or zoned, as possible.
3. Provide clear and unshaded area on-site and install photovoltaics; or, wire the building to accommodate the installation of PV in the future.
4. Use Energy Star compliant (reflectivity of greater than 6.5) and high-emissivity roofing (with an emissivity of at least 0.8).

WATER EFFICIENCY

Did you...

1. Specify Energy Star water conserving appliances.
2. Specify EPA WaterSense labeled water efficient plumbing fixtures.

INDOOR AIR QUALITY

Residential

Did you...

1. Comply with the requirements of the Energy Star Indoor Air Package.

INDOOR AIR QUALITY

Non-Residential

Did you...

1. Design the building ventilation systems to achieve one of the following baselines:
 - a. Meet the minimum requirements of Sections 4 through 7 of ASHRAE Standard 62.1-2007, Ventilation for Acceptable Indoor Air Quality (with errata but without addenda).
 - b. For naturally ventilated buildings, comply with ASHRAE Standard 62.1-2007, Paragraph 5.1 (with errata but without addenda)

HEALTHY MATERIALS AND RENEWABLE RESOURCES

Did you...

1. Use recycled or recyclable environmentally preferable materials (e.g. metals, concrete and cementitious materials, masonry, acoustic tile, drywall, carpet, ceramic tile, insulation; reclaimed woods; bio-based; agricultural residue, recycled rubber, reclaimed wood and sawdust, recycled plastics).

2. Use locally available, indigenous materials, and/or green products that are durable and promote a healthy and easy to maintain living environment (FSC-certified woods, Green Label products; low- or no- VOC products).
3. Specify wood and agrifiber products and laminating adhesives that contain no added urea-formaldehyde resins.
4. Select flooring products that are either certified under the Green Label Plus program or for which testing has been done by qualified independent laboratories for appropriate environmental criteria.
5. Specify low-VOC materials in construction documents, including paints and coatings, and sealants and adhesives.

UNIVERSAL DESIGN

Did you...

1. Install ADA certified fixtures throughout.
2. Install entry doors with minimum dimension of 3' and interior doors with minimum dimension of 2'-8".
3. Install ADA certified door hardware throughout.
4. Design a primary entrance so that a ramp is not necessary, to the greatest extent possible. If ramp is necessary or required, design ramp to be fully integrated into the design of the building and entryway.
5. Reduce on-site curbs, especially from parking area to primary entrance.
6. Design on- and off- site circulation routes to meet ADA standards.

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RESOURCES

NJ Department of Environmental Protection

- Model Environmental Assessment Ordinance Checklist
http://www.state.nj.us/dep/opsc/docs/env_assessment_ord_checklist.pdf
- Preliminary Assessment/ Site Investigation Forms
http://www.nj.gov/dep/srp/srra/forms/pa_si_ins.pdf
http://www.nj.gov/dep/srp/srra/forms/pa_si.pdf

US Environmental Protection Agency

- Energy Star
<http://www.energystar.gov/>
https://www.energystar.gov/index.cfm?c=new_homes.nh_verification_process
 - Energy Star Partners in NJ
https://www.energystar.gov/index.cfm?fuseaction=new_homes_partners.showStateResults&s_code=NJ
 - National Builder Option Package
http://www.energystar.gov/ia/partners/bldrs_lenders_raters/downloads/Nat_BOP_Final.pdf
 - Thermal Bypass Checklist and Guide
http://www.energystar.gov/ia/partners/bldrs_lenders_raters/downloads/TBC_Guide_062507.pdf
 - Advanced Light Package
https://www.energystar.gov/index.cfm?c=fixtures.alp_consumers
 - National Program Requirements
https://www.energystar.gov/ia/partners/bldrs_lenders_raters/downloads/National_Program_Requirements.pdf?03f2-1913
- WaterSense
<http://www.epa.gov/watersense/>
- Sediment and Erosion Control Best Practices
<http://www.epa.gov/region6/6en/w/sw/sediment.pdf>
- Storm Water Management Best Practices
http://www.epa.gov/oaintrnt/stormwater/best_practices.htm
- Green Infrastructure
<http://water.epa.gov/infrastructure/greeninfrastructure/index.cfm>
- Low Impact Development (LID)
<http://water.epa.gov/polwaste/green/>

Enterprise Green Communities

<http://www.enterprisecommunity.com/resources/ResourceDetails?ID=67453.pdf#>

USGBC LEED Rating Systems

<http://www.usgbc.org/certification>

Universal Design

- Universal Design New York

<http://www.nyc.gov/html/ddc/downloads/pdf/udny/udny2.pdf>

- Universal Design in Housing

http://www.ncsu.edu/ncsu/design/cud/pubs_p/docs/UDinHousing.pdf