



# 2019 City of Alexandria Green Building Policy

## POLICY STATEMENT

[IN PROGRESS].....

## DEVELOPMENT STANDARDS

All new private and public developments and major building renovations that require a Development Site Plan (DSP) or a Development Special Use Permit (DSUP) are subject to comply with the Green Building Policy. The 2019 Green Building Policy is in effect as of March 1, 2020 for DSP and DSUP applications submitted on or after this date.

The Green Building Policy identifies three third-party green building certification rating systems that serve as the standard rating systems accepted under this Policy, a minimum level of certification for private and public development and specific priority "Performance Points" in each rating system that a project is expected to achieve.

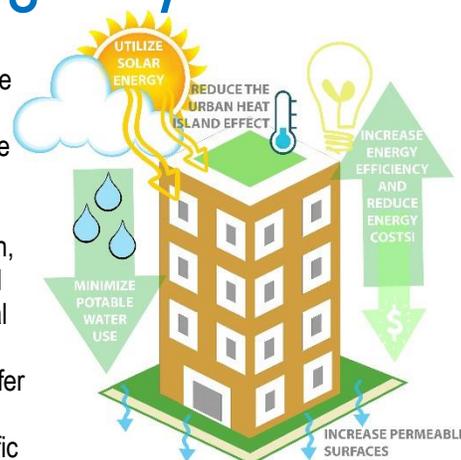
## RATING SYSTEMS & MINIMUM LEVEL OF CERTIFICATION

LEED, Green Globes, and Earthcraft are the standard third-party green building rating systems accepted under the Green Building Policy. The minimum level of certification for each system is listed on the following pages for both public and private development. The latest version of each rating system at the time of the first Final Site Plan submission shall apply.

## PERFORMANCE POINTS

"Performance Points" are defined as specific minimum credit points each project must achieve as part of the Minimum Level

of Certification for the selected rating system. Performance Points are identified within the areas of energy use reduction, water efficiency, and indoor environmental quality. Projects that use LEED should refer to the LEED Credit Library for the specific criteria of each point. Those who utilize Green Globes or Earthcraft must comply with the Performance Point overlay criteria in Appendix B and C of this Policy, respectively. Performance Points may be adjusted over time to correspond with updates to the rating systems.



In addition to the minimum level of certification and the designated Performance Points, public developments will strive to meet the following criteria provided it is technically feasible, cost effective, and situationally appropriate:

STORMWATER	100% of phosphorous removal through green infrastructure.
NET ZERO ENERGY	Net zero energy (NZE) through a combination of energy efficiency and renewable energy systems.

## PUBLIC BUILDING RENOVATIONS

For public building renovations that do not require a DSP or DSUP, the City will utilize LEED Gold for Interior Design and Construction (ID+C) and LEED Gold Operations and Maintenance (O&M) standards as a guideline for interior design and construction projects and targeted renovations of individual building systems (e.g.; HVAC, roof, windows, plumbing, etc.). Actual third-party certification will be achieved when technically and financially feasible.

## FLEXIBILITY

Flexibility from the Green Building Policy will be considered on a case-by-case basis. The Director of Planning and Zoning will determine if the request is justified based upon the information provided with the development application. The City will use the data collected from this process over time to establish consistent criteria and thresholds for alternatives to compliance with the Green Building Policy.

## City of Alexandria Green Building Policy

### LEED

RATING SYSTEM	MINIMUM LEVEL OF CERTIFICATION		PERFORMANCE POINTS											
			ENERGY USE REDUCTION			WATER EFFICIENCY			INDOOR ENVIRONMENTAL QUALITY					
	Private	Public	POINTS		CREDIT	POINTS		CREDIT	POINTS		CREDIT			
			Private	Public		Private	Public		Private	Public				
LEED 	Silver	Gold	5	7	Optimize Energy Performance							1	1	Low-Emitting Materials
			2	3	Renewable Energy Production	4	4	Indoor Water Use Reduction	1	1	Construction Indoor Air Quality Management Plan			
									1	1	Thermal Comfort			
			1	1	Advanced Energy Metering <sup>2</sup>				Optional	2	Daylight			
						1	1	Outdoor Water Use Reduction	1	1	Quality Views			
			3	3	Enhanced Commissioning				Optional	1	Indoor Air Quality Assessment			

**NOTES:**

- 1) Refer to LEED Credit Library for point criteria.
- 2) A LEED Interpretation/alternative compliance path that incorporates Energy Star reporting and/or sub-metering will be provided for multifamily residential projects in Alexandria.



# City of Alexandria Green Building Policy

## Green Globes

RATING SYSTEM	MINIMUM LEVEL OF CERTIFICATION		PERFORMANCE POINTS								
			ENERGY USE REDUCTION			WATER EFFICIENCY			INDOOR ENVIRONMENTAL QUALITY		
	Private	Public	POINTS		CREDIT	POINTS		CREDIT	POINTS		CREDIT
			Private	Public		Private	Public		Private	Public	
	2 Green Globes	3 Green Globes	60	68	3.3.1.1 Assessing Energy Performance (Path A, B, or C)	24	24	3.4.1.1 Water Consumption	10	10	3.7.2.1 Volatile Organic Compounds
			9	9	3.3.9.1.1 On-site Renewable Energy Feasibility Study	6	6	3.2.4.1 Landscape and Irrigation Plan (LIP) by Certified Professional	11	11	3.7.1.1 Ventilation Air Quality
			18-23	18-23	3.3.9. Renewable Energy	3	3	3.2.4.1.1 Soil Type, Drainage and Light Conditions	8	8	3.7.1.2 Air Exchange
			COMMISSIONING						12 <sup>2</sup>	12 <sup>2</sup>	3.7.4 Thermal Comfort
			4	4	3.1.3.2.1.1 HVAC and Refrigeration Systems	2	2	3.2.4.3.2 Native/Non-invasive Plant Material	5	5	3.1.2.4 IAQ During Construction
			3	3	3.1.3.2.1.5 Plumbing						
			1	1	3.1.3.2.1.6 Electrical	3	3	3.2.4.3.3 Turfgrass Minimalized	Optional	2	3.1.2.4.1 IAQ During Construction: Indoor Air Quality Test Pathway
			1	1	3.1.3.2.1.7 Lighting						
			1	1	3.1.3.2.1.8 Building Automation	1	1	3.4.8.2.2 Drip/low Volume Irrigation <sup>4</sup>	Optional	3	3.1.2.4.2 IAQ of Occupied Areas During Construction
			1	1	3.1.3.3.1 Training Requirements						
			6	6	3.1.3.4.1 Operations and Maintenance Manuals	1	1	3.4.8.2.3 WaterSense/SWAT/Smart Control system <sup>4</sup>	Optional	8	3.3.5.4 Daylighting
			METERING, MEASUREMENT AND VERIFICATION <sup>3</sup>								
			1	1	3.3.3.1.1.1 Electricity	0.5	0.5	3.4.8.2.4 Regulation of Precipitation Rate on Sprinkler <sup>4</sup>	Optional	7	3.7.3.1.1 Daylighting
			1	1	3.3.3.1.1.2 Heating Fuels						
			1	1	3.3.3.1.1.3 Steam	0.5	0.5	3.4.8.2.5 Swing Joints/Flex Pipes on Irrigation Heads <sup>4</sup>	5	5	3.7.3.1.2 Views
			1	1	3.3.3.1.1.4 Other, with description as applicable						

**NOTES:**

- 1) Refer to Appendix B: "City of Alexandria, VA Performance Design Targets – Directed Use Criteria ("Performance Points") for Green Globes" for Performance Point criteria.
- 2) Up to 12 points maximum dependent upon building use.
- 3) As-applicable to the building's systems. See Appendix B for sub-metering criteria and the Performance Points for end-uses making up over 10% of the building load.
- 4) Credit is only applicable if an automated irrigation system is installed.



# City of Alexandria Green Building Policy

## Earthcraft

RATING SYSTEM	MINIMUM LEVEL OF CERTIFICATION		PERFORMANCE POINTS											
			ENERGY USE REDUCTION			WATER EFFICIENCY			INDOOR ENVIRONMENTAL QUALITY					
	Private	Public	POINTS		CREDIT	POINTS		CREDIT	POINTS		CREDIT			
			Private	Public		Private	Public		Private	Public				
	Multifamily Gold	Multifamily [In Progress]	IP	IP	AL11.0 Renewable Energy	IP	IP	AL10.0 WaterSense Labeled Fixtures	9	9	IAQ 2.7 Certified Low or No VOC Materials			
			2	2	EO 2.3 Pre-occupancy Briefing	6	6	WE1.5 Low-flow Fixtures						
			2	2	EO 2.4 Post-occupancy Briefing	IP	IP	AL10.2 Reduce Residential Water Use	IP	IP	IN PROGRESS			
			2	2	EO 2.5 Environmental Management and Building Maintenance Guidelines for Staff	IP	IP	AL10.1 Temporary Irrigation or Landscape Water Use Reduction						
			IP	IP	High-rise Commissioning (IN PROGRESS)	6	6	IN 1.7 12 Months Post-Construction Energy Monitoring	1	1	WE 2.7 Drought-Tolerant/Native Landscaping Turf and Plants	IP	IP	IN PROGRESS
						4	4	AL10.3 Irrigation System Design <sup>2</sup>	2	2	WE 2.10.3 Irrigation System Zones <sup>2</sup>			
						2	2	WE 2.10.4 Irrigation System Weather/Moister Sensor <sup>2</sup>	2	2	WE 2.11 Timer on Exterior Water Spigots <sup>2</sup>	IP	IP	IN PROGRESS
	1	1	IN PROGRESS	IP	IP	IN PROGRESS	IP	IP	IN PROGRESS					

**NOTES:**

- 1) Refer to Appendix C: "City of Alexandria, VA Performance Design Targets – Directed Use Criteria ("Performance Points") for Earthcraft" for Performance Point criteria.
- 2) Credit is only applicable if an automated irrigation system is installed.
- 3) Applicable to commercial buildings, schools and public facilities up to 80,000 square feet.

# APPENDIX A: PUBLIC DEVELOPMENT PERFORMANCE DESIGN EVALUATION FORM

Date: \_\_\_\_\_

Proposed Number of Units (as applicable): \_\_\_\_\_

Project Name: \_\_\_\_\_

Proposed Building Height (as applicable): \_\_\_\_\_

Project Address: \_\_\_\_\_

Applicant: \_\_\_\_\_

Site Area: \_\_\_\_\_

DSP/DSUP Number (as applicable): \_\_\_\_\_

Proposed Gross Square Footage (as applicable): \_\_\_\_\_

Contact Information: \_\_\_\_\_

This form must be submitted concurrently with all public development project (DSP/DSUP) applications. For interior design and construction and/or targeted renovations, this form must be submitted to the Department of Planning and Zoning with the building permit application. Where any of the following criteria is not achieved in public buildings, this form must be processed as a partial exemption from the Green Building Policy for Public Development.

## 1. Stormwater:

Select one:

This project will achieve 100% of phosphorous removal through green infrastructure.

This project will not achieve 100% of phosphorous removal through green infrastructure.

- If this option is selected, in a separate attachment, explain the technical, financial, and/or situational challenges that prevented the project from achieving the criteria for stormwater. Provide supplemental documentation as needed.

N/A (for interior design and construction projects and/or targeted renovations only)

## 2. Net Zero Energy:

Select one:

This project will achieve net zero energy (NZE) through a combination of energy efficiency and renewable energy systems.

This project will not achieve net zero energy (NZE) through a combination of energy efficiency and renewable energy systems.

- If this option is selected, in a separate attachment, explain the technical, financial, and/or situational challenges that prevented the project from achieving the criteria for net zero energy. Indicate if the project will be designed as net zero energy ready. If not, explain the technical, financial, and/or situational challenges that prevented the project from achieving the criteria for net zero energy ready infrastructure. Provide supplemental documentation as needed.

N/A (for interior design and construction projects and/or targeted renovations only)

## 3. Existing Building Renovations (that do not require a DSP/DSUP) (to be submitted with the project's building permit submission)

Select one:

This project will utilize LEED Gold for Interior Design and Construction (ID+C) and LEED Gold Operations and Maintenance (O&M) standards as a guideline.

This project will not utilize LEED Gold for Interior Design and Construction (ID+C) and LEED Gold Operations and Maintenance (O&M) standards as a guideline.

- If this option is selected, explain the technical, financial, and/or situational challenges that prevented the project from achieving the criteria for existing building renovations that do not require a DSP/DSUP. Provide supplemental documentation as needed.

N/A (for new construction projects only)

## APPENDIX B: CITY OF ALEXANDRIA, VA PERFORMANCE DESIGN TARGETS – DIRECTED USE CRITERIA (“PERFORMANCE POINTS”) FOR GREEN GLOBES

As part of achieving a minimum certification of Two Green Globes for private sector projects, or Three Green Globes for public sector projects in the City of Alexandria, VA, Green Globes projects must fulfill the following Green Globes criteria:

### ***EUI Target of >30%***

Green Globes Criteria: 3.3.1.1: All projects must achieve a minimum of 60 points under Pathways A, B, or C, identified in criteria 3.3.1.1 (60 points)

### ***Onsite Renewable Energy***

3.3.9.1.1.: Perform feasibility study under criteria 3.3.9.1.1 to determine whether 5% onsite renewable energy equipment or 40% off-site renewable energy equipment is achievable for the project (9 points)

Per the result of the feasibility study, achieve these criteria by following one of the three paths below:

--Criteria 3.3.9.1.2: Installation of 5% or greater **on-site** renewable energy; or installation of 40% or greater **off-site** renewable energy. (23 points)

or

--Criteria 3.3.9.2.1: Procurement of RECs and/or offsets for 200% of building energy for a minimum of three years (**18 points**)

or

--Achieve Criteria 3.3.9.1.2 for installation of either 2% on-site or 20% off-site renewable energy equipment (14 points) **AND** achieve 3.3.9.2.1 for procurement of RECs and/or offsets for 100% of building energy for minimum of three years (18 points).

### ***Commissioning***

Projects must fulfill commissioning criteria related only to mechanical systems, plumbing, and electrical, specifically the following Green Globes Criteria:

3.1.3.2.1.1., HVAC and refrigeration systems (4 points)

3.1.3.2.1.5., Plumbing (3 points)

3.1.3.2.1.6., Electrical (1 point)

3.1.3.2.1.7., Lighting (1 point)

3.1.3.2.1.8., Building automation (1 point)

3.1.3.3.1., Training requirements (1 point)

3.1.3.4.1., Operations and Maintenance manuals (6 points)

Total points: (17 points)

### ***Advanced Energy Metering***

All applicable points in the following Green Globes Criteria related to whole building/significant use metering must be fulfilled (*as applicable to the building's systems*):

- 3.3.3.1.1.1., Electricity (1 point)
  - 3.3.3.1.1.2., Heating Fuels (1 point)
  - 3.3.3.1.1.3., Steam (1 point)
  - 3.3.3.1.1.4., Other, with description (1 point)
- Total possible points for this section: (4 points)

And, for the following end uses making up over 10% of the building load, *as applicable to the building*:

- 3.3.3.1.2.1., Sub-metering on lighting and lighting controls by floors or zones (0.5 points)
  - 3.3.3.1.2.2., Sub-metering on plug loads by floor or zones (0.5 points)
  - 3.3.3.1.2.3., Sub-metering on major electric HVAC equipment (0.5 points)
  - 3.3.3.1.2.4., Sub-metering on chilled water generation (0.5 points)
  - 3.3.3.1.2.5., Sub-metering for onsite renewable energy generation (0.5 points)
  - 3.3.3.1.2.6., Sub-metering for heating water or steam generation (0.5 points)
- Total possible points for this section: (3 points)

### ***Indoor Water Use***

The following Green Globes Criteria must be fulfilled:

- 3.4.1.1, Projected water consumption determined to be less than the baseline by a minimum of 40% (24 points)

### ***Outdoor Water Use Reduction***

The following Green Globes Criteria must be fulfilled through a combination of project achievements in both landscaping (Site), and irrigation systems (Water) performance:

- 3.2.4.1., Landscape Irrigation Plan (LIP) by Landscape Architect (6 points)
- 3.2.4.1.1., LIP for soil type, drainage and light (3 points)
- 3.2.4.3.2., Native/Non-invasive plants (2 points)
- 3.2.4.3.3., Turf grass minimalized (3 points)
- 3.4.8.2.2., Drip/low volume irrigation (1 point)
- 3.4.8.2.3., Watersense/SWAT/Smart Control system (1 point)
- 3.4.8.2.4., Regulation of precipitation rate on sprinkler systems (0.5 point)
- 3.4.8.2.5., Swing joints/Flex pipes on irrigation heads (0.5 point)

### ***Indoor Environmental Quality***

Under Indoor Environmental Quality (IEQ), the following Green Globes Criteria must be fulfilled:

- 3.1.2.4 IAQ During Construction (5 points maximum)
- 3.3.5.4 Daylighting (8 points) (public buildings only)
- 3.7.3.1.1 Daylighting (7 points) (public buildings only)
- 3.7.1.1 Ventilation Air Quantity (11 points)
- 3.7.1.2 Air Exchange (8 points)
- 3.7.2.1 Volatile Organic Compounds (10 points)
- 3.7.3.1.2 Views (5 points) [suggest that this criteria be specifically required for multifamily, schools, offices, hotel guestrooms, hospital standard patient rooms, and specifically **exclude** hospital procedure rooms, hotel meeting space and back of house from the calculation, **and exclude** historic structure major renovation projects. (other types TBD)]
- 3.7.4 Thermal Comfort (up to 12 points depending on building use/purpose)

### ***Indoor Air Quality for Public Buildings***

3.1.2.4.1 IAQ During Construction: Indoor Air Quality Test pathway (2 points)

3.1.2.4.2 IAQ of Occupied Areas During Construction (3 points)

Note: both of the above criteria are required to be verified in person by a Green Globes Assessor during the Stage 2 Onsite Assessment

### ***Energy Requirements for Public Buildings***

Minimum overall project certification level: Three Green Globes

3.3.1.1: All projects must achieve a minimum of 68 points under Pathways A, B, or C , identified in criteria 3.3.1.1 (**68 points**) for an EUI  $\geq$  35%

### ***Renewable Energy Requirements for Public Buildings***

3.3.9.1.1.: Perform feasibility study under criteria 3.3.9.1.1 to determine whether a minimum of 10% onsite renewable energy equipment or 60% off-site renewable energy equipment is achievable for the project (**9 points**)

Per the result of the feasibility study, achieve these criteria by following one of the three paths below:

--Criteria 3.3.9.1.2: Installation of 10% or greater **on-site** renewable energy; or installation of 60% or greater **off-site** renewable energy. (**23 points**)

**or**

--Criteria 3.3.9.2.1: Procurement of RECs and/or offsets for 200% of building energy for a minimum of six years (**18 points**)

**or**

--In cases where the onsite/offsite renewable energy goals may be partially achieved, Criteria 3.3.9.1.2 for installation of either a minimum of 5% on-site or 30% off-site renewable energy equipment (14 points) **AND** achieve 3.3.9.2.1 for procurement of RECs and/or offsets for 100% of building energy for minimum of six years (18 points).

**APPENDIX C: CITY OF ALEXANDRIA, VA PERFORMANCE DESIGN TARGETS (“PERFORMANCE POINTS”) – DIRECTED USE CRITERIA FOR EARTH CRAFT**

[IN PROGRESS]

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