

GOVERNMENT OF THE DISTRICT OF COLUMBIA  
Office of Zoning



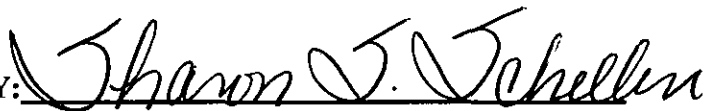
Z.C. CASE NO.: 08-06 (Chapter B-13 Green Area Ratio)

OCT 27 2010

As Secretary to the Commission, I hereby certify that on \_\_\_\_\_ copies of this Z.C. Notice of Public Hearing were mailed first class, postage prepaid or sent by inter-office government mail to the following:

- |  |   |
|--|---|
| 1. D.C. Register   | 7. Zoning Administrator (Matthew LeGrant)   |
| 2. All ANC Chairs  | 8. Melinda Bolling, Acting General Counsel<br>DCRA<br>1100 4th Street, S.W.<br>Washington, DC 20024 |
| 3. Gottlieb Simon<br>ANC<br>1350 Pennsylvania Avenue, N.W.<br>Washington, D.C. 20004 | 9. Office of the Attorney General (Alan<br>Bergstein)   |
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ATTESTED BY:

  
Sharon S. Schellin  
Secretary to the Zoning Commission  
Office of Zoning

ZONING COMMISSION  
District of Columbia

CASE NO.

EXHIBIT NO.

**ZONING COMMISSION FOR THE DISTRICT OF COLUMBIA  
NOTICE OF PUBLIC HEARING**

**TIME AND PLACE:**           **Monday, December 20, 2010, @ 6:30 PM**  
                                  **Office of Zoning Hearing Room**  
                                  **441 4<sup>th</sup> Street, N.W., Suite 220**  
                                  **Washington, D.C. 2001**

**FOR THE PURPOSE OF CONSIDERING THE FOLLOWING:**

**CASE NO. 08-06 (Comprehensive Zoning Regulations Review: Chapter B-13: Green Area Ratio)**

**THIS CASE IS OF INTEREST TO ALL ANCs**

This Notice of Public Hearing announces one of several proposed draft zoning text chapters the Zoning Commission for the District of Columbia (the "Commission") will consider under this docket. All chapters presented here reflect previous recommendations to the Commission from the Office of Planning that were the subject of public hearings.

This hearing will consider proposed text for a new chapter in the Zoning Regulations regulating green site design. The proposed Green Area Ratio ("GAR") chapter provides general rules for a city-wide requirement for green site design that will vary by zone. This chapter includes explanation of the system, methods of calculation, terms of measurement, and requirements for review.

The new chapters are based upon a codification of the portion of Title 11 containing the Zoning Regulations and associated administrative rules into 10 subtitles. A description of this codification can be found at [www.dczoningupdate.org/publicnotices.asp](http://www.dczoningupdate.org/publicnotices.asp). The public should assume that the text advertised in this notice will only apply to buildings constructed pursuant to building permits issued after the effective date of the revised Title 11 or to significant additions to existing buildings if the additions are constructed pursuant to such permits.

More detailed information, discussion, and analysis for the proposed text can be found in the accompanying report prepared by OP. This document can be viewed by clicking on "GAR report" at [www.dczoningupdate.org/documentcenter.asp](http://www.dczoningupdate.org/documentcenter.asp).

Italicized terms will be defined. The bracketed citations are to provision contained in the current Title 11. The provision will be re-codified and, in all likelihood rephrased in the revised Title 11.

Title 11 DCMR (Zoning) is proposed to be amended as follows:

**Create new Chapter 13 in Title 11 Subtitle B:**

**CHAPTER 15 GREEN AREA RATIO**

**1500 INTRODUCTION TO GREEN AREA RATIO**

- 1500.1 Green Area Ratio (“GAR”) is the ratio of the weighted value of landscape elements to land area. The GAR score relates to an increase in the quantity and quality of environmental performance of the urban landscape.
- 1500.2 Green Area Ratio sets integrated environmental requirements for landscape elements and site design that contribute to the reduction of stormwater runoff, the improvement of air quality, and the mitigation of the urban heat island effect.
- 1500.3 The purposes of the GAR regulations are to:
- (a) Implement a value-based system of requirements for environmental site design that provides flexibility in meeting environmental performance standards; and
  - (b) Promote attractive and environmentally functional landscapes.
- 1500.4 The purpose of this chapter is to:
- (a) Provide general guidance about the regulation of GAR requirements;
  - (b) Define the applicability of GAR;
  - (c) Set forth the formula for calculating the GAR and define its component parts;
  - (d) Identify those landscape elements that are included in the GAR, explain how their area is measured, and set forth eligibility requirements;
  - (e) Establish multipliers for each eligible landscape element;
  - (f) Indicate what plans and certifications must accompany an application submitted to demonstrate proof of GAR compliance; and
  - (g) Establish maintenance requirements for the landscape elements that are counted toward a property’s GAR requirement.

**1501 RELATIONSHIP TO LANDUSE SUBTITLES**

- 1501.1 The GAR regulations of this chapter apply to all zones in all land use subtitles. Each land use subtitle also includes development standards tables containing GAR standards specific to zones within that subtitle.

**1502 APPLICABILITY OF GREEN AREA RATIO STANDARDS**

- 1502.1 The GAR applies to all new buildings requiring a Certificate of Occupancy and to all existing buildings requiring a Certificate of Occupancy where any additions, alteration, or repairs within any twelve (12) month period exceed one hundred percent (100%) of the assessed value of the building as set forth in the records of the Office of Tax and Revenue as of the date of the building permit application; provided:
- (a) The cost basis for alterations or additions to an existing building shall be the amount indicated by the applicant on the application for a building permit; and
  - (b) The assessed value of the building shall be the value set forth in records of the Office of Tax and Revenue as of the date of the building permit application.

**1503 CALCULATION OF GREEN AREA RATIO**

- 1503.1 The GAR shall be calculated using the following formula:

$$\text{GAR} = \frac{(\text{area of landscape element 1} \times \text{multiplier}) + (\text{area of landscape element 2} \times \text{multiplier}) + \dots}{\text{Lot area}}$$

- 1503.2 For the purposes of this formula and the remainder of this section:

- (a) The term “landscape element” refers to one of the elements listed in the left hand column in Table B § 1303.9, and will be hereafter referred to as “landscape element” or “element;”
- (b) The term “multiplier” refers the number listed in the right hand column of Table B § 1303.9 that corresponds to a “landscape element”; and
- (c) The term “area of landscape element” means the square feet of a landscape element, unless the element is a tree or large shrub, in which case “area of landscape area” refers to the element’s equivalent square footage as indicated in B § 1303.7.

- 1503.3 The process for calculating a property's GAR under the formula is as follows:
- (a) The area of each landscape element is multiplied by its corresponding multiplier;
  - (b) The resulting numbers for all landscape elements are added together;
  - (c) The resulting point total is then divided by the total land area of the lot; and
  - (d) The product of the equation equals the property's GAR.
- 1503.4 The total points for all permeable paving and enhanced tree growth credits may not count for more than one-third (1/3) of the GAR score for a lot.
- 1503.5 If multiple landscape elements occupy the same area, for example groundcover under a tree, the full square footage or equivalent square footage of each element may be counted.
- 1503.6 A landscape element must meet the eligibility requirements of B § 1304.
- 1503.7 Equivalent square feet of tree and large shrubs are identified in the table below.

GREEN AREA RATIO LANDSCAPE ELEMENTS	EQUIVALENT SQUARE FOOTAGE
Plants at least 2 feet tall at maturity	9 square feet per plant
Tree canopy for trees 2.5 inches (2.5 in.) to 8 inches (8 in.) in diameter	100 square feet per tree
Tree canopy for trees 8 inches (8 in.) to 24 inches (24 in.) in diameter	350 square feet per tree
Tree canopy for trees 24 inches (24 in.) diameter or larger	450 square feet per tree

- 1503.8 Landscape elements of the GAR shall be measured in the following ways:
- (a) All trees shall be measured for diameter at a height four feet-six inches (4 ft. 6 in.) above grade when planted. Use the square footage equivalent based on diameter in the table in § 1303.5;
  - (b) For vegetated walls, use the vertical square footage of the portion of the wall covered by vegetation; and
  - (c) For all other elements other than trees, large shrubs, perennials, and vegetated walls, square footage is determined by the area of a horizontal plane that is over the element.

1503.9 Eligible landscape elements are identified in the table below:

GREEN AREA RATIO LANDSCAPE ELEMENTS	MULTIPLIER
<b>Landscaped area (select one of the following for each area)</b>	
Landscaped areas with a soil depth of less than 24 inches	0.3
Landscaped areas with a soil depth of 24 inches or more	0.6
Bioretention facilities	0.4
<b>Plantings</b>	
Ground covers, or other plants less than 2 feet tall at maturity	0.5
Plants at least 2 feet tall at maturity	0.3
Tree canopy for all trees 2.5 inches (2.5 in.) to 8 inches (in.) in diameter	0.4
Tree canopy for new trees 8 inches (in.) in diameter or larger	0.5
Tree canopy for preservation of existing trees 8 inches (8 in.) to 24 inches (24 in.) in diameter	0.7
Tree canopy for preservation of existing trees 24 inches (24 in.) diameter or larger	0.8
Green wall, plantings on a vertical surface	0.6
<b>Vegetated roofs</b>	
Extensive vegetated roof over at least 2 inches but less than 4 inches of growth medium	0.3
Intensive vegetated roof over at least 4 inches of growth medium	0.4
Water features (using at least 50% recycled water)	0.2
<b>Permeable paving</b>	
Permeable paving over at least 6 inches and less than 2 feet of soil or gravel	0.4
Permeable paving over at least 2 feet of soil or gravel	0.5
Enhanced tree growth systems	0.4
<b>Bonuses</b>	
Native plant species	0.1
Landscaping in food cultivation	0.1
Harvested stormwater irrigation	0.1

**1504 LANDSCAPE ELEMENT ELIGIBILITY CONDITIONS FOR GREEN AREA RATIO**

- 1504.1 No landscape element may be counted towards a property's GAR unless it meets the applicable eligibility condition stated in this section.
- 1504.2 Plantings over the specified soil depths shall meet the required conditions listed in the Table of Landscape Elements and Multipliers in B §1303.2.

- 1504.3      *Bioretention facilities* shall be landscaped areas that receive rainwater from surrounding areas and use plants and soils to slow, filter, and infiltrate stormwater runoff. *Bioretention facilities* include but are not limited to rain or rainwater gardens, bioretention planters, or linear cells or swales. These do not include cement or concrete only structures.
- 1504.4      Trees shall meet the following conditions:
- (a)      All trees shall be at least two and one half (2.5) inches in diameter measured at a height four feet- six inches (4'6") above grade when planted and shall be replaced if damaged or killed by any cause; and
  - (b)      All trees shall meet the American Standard for Nursery stock, as set forth by the American Nursery and Landscape Association.
- 1504.5      *Vegetated walls* shall meet the following conditions:
- (a)      The maximum calculated vertical dimension shall not exceed thirty (30) feet unless the vegetated wall features a built-in growth medium;
  - (b)      The area calculated for the vegetated wall features shall be fully covered within a period of two (2) to five (5) years from planning;
  - (c)      The walls shall be at least five (5) feet from a side or rear lot line; and
  - (d)      Where stormwater harvesting for irrigation is proposed, vegetated walls shall contain a connection to the proposed irrigation system.
- 1504.6      *Vegetated roofs* shall meet the following conditions:
- (a)      Designs for vegetated roofs must include plans to provide supplemental water for a minimum of two (2) growing seasons;
  - (b)      Where stormwater harvesting for irrigation is proposed, vegetated roofs shall contain a connection to the proposed irrigation system; and
  - (c)      The vegetation on a vegetated roof is not additionally eligible for groundcover value towards GAR requirements.
- 1504.7      Water features shall meet the following conditions:
- (a)      Water features must use harvested rainwater for at least fifty percent (50%) of the annual flow; and

- (b) The water features must be under water for at least six (6) months out of twelve (12).

1504.8 Enhanced tree growth systems shall be at least twenty-four (24) inches deep, under pavement, and adjacent to planting areas.

1504.9 Native plant species shall meet the following conditions:

- (a) The plants are listed in the U.S. Fish and Wildlife Service's Native Plants for Wildlife Conservation Landscaping: Chesapeake Bay Watershed guide; or
- (b) The Applicant provides two references in current publications showing that the plant is native to the region; and
- (c) The plant is not listed on the U.S. Fish and Wildlife Service's list of Plant Invaders of Mid-Atlantic Natural Areas.

1504.10 Food cultivation shall meet the following conditions:

- (a) All food cultivation areas must be easily accessible to at least one occupant of the building;
- (b) All food cultivation areas must have a source of water that can reach all portions of the food cultivation area; and
- (c) The cultivation of animals for food is not eligible for GAR credits.

1504.11 Harvesting stormwater for irrigation shall meet the following conditions:

- (a) If the irrigation type is spray, applicants shall follow treatment standards set forth in the current District Department of Environment's Stormwater Management Guidebook; or
- (b) If the irrigation type is drip, no additional treatment of stormwater is required.

## **1505 SUBMITTAL REQUIREMENTS FOR GREEN AREA RATIO**

1505.1 This section lists the submittal requirements for demonstrating compliance with a GAR requirement.

1505.2 For the purposes of this section, the term Certified Landscape Expert means a person who is a:



- (a) State of Virginia certified landscape architect;
- (b) State of Maryland certified landscape architect;
- (c) International Society of Arboriculture Certified Arborist;
- (d) Maryland's certified Professional Horticulturist;
- (e) Landscape Contractors Association MD-DC-VA, Certified Landscape Technician; or
- (f) Certified U.S. Green Building Council professional.

1505.3 Applicants shall submit a GAR score sheet with the GAR calculated for the given lot at the time of building permit application.

1505.4 Applicants shall provide the GAR worksheet showing how the GAR was calculated for the given lot.

1505.5 Applicants shall provide a landscape plan prepared by a Certified Landscape Expert that includes the following information:

- (a) GAR elements called out by category and area, which may be provided as a part of the landscape plan or as a separate document;
- (b) Lot dimension and size;
- (c) Location and areas of all landscape elements with dimensions;
- (d) Location, size, and species of all plants used to meet requirements;
- (e) Both common and botanical names of all plant material;
- (f) Identification of all existing trees that are to be preserved, with their location, trunk diameter at four feet- six inches (4'6") above grade, canopy radius, and species;
- (g) Plans indicating how preserved trees and other plants will be protected during demolition and construction;
- (h) Location and dimensions of wheel stops, curbs, or other devices to protect landscaping for landscaped areas adjacent to driveways;
- (i) A schematic irrigation and drainage plan and the size and depth of all plant containers for rooftop or container landscaping or areas to be irrigated with rainwater;

- (j) Location and size of any trees to be removed;
- (k) Specifications for soil improvement; and
- (l) Signature of the certified landscape expert who prepared the plans together as verification that plantings and other landscape elements meet the requirements of the this Chapter.

1505.6 Applicants shall provide a landscape maintenance plan prepared and signed by a Certified Landscape Expert that describes how the plantings will be cared for and maintained including:

- (a) Soil preparation;
- (b) Use of compost;
- (c) Plant replacement;
- (d) Irrigation;
- (e) Weed and pest control;
- (f) Control of noxious or invasive species; and
- (g) Care and maintenance of water and *hardscape features*.

1505.7 The following modifications or substitutions to the landscape elements of an approved landscape plan require a plan revision and approval:

- (a) Number of trees, shrubs, or groundcovers;
- (b) Location of required plantings or landscape features;
- (c) Substitution of species; or
- (d) Revisions of any feature that could decrease planting area or lower the GAR score.

1505.8 Except as provided below, approved landscape elements shall be installed in accordance with the approved plan prior to the issuance of the Certificate of Occupancy.

1505.9 Prior to the issuance of the certificate of occupancy, a landscape checklist must be signed by a Certified Landscape Expert, verifying that that landscaping was installed according to the building permit approved by DCRA.

- 1505.10 The Zoning Administrator may grant a temporary certificate of occupancy when installation of the required landscaping is not currently possible due to weather, season or site construction subject to the condition that landscaping must be installed within four (4) months after the date the temporary certificate is issued.
- 1505.11 The temporary certificate of occupancy may be extended up to two times by four (4) month periods by the Zoning Administrator based on the same conditions of § 1305.10.

**1506 SPECIAL EXCEPTIONS FOR GREEN AREA RATIO**

- 1506.1 The Board of Zoning Adjustment may grant, by special exception, a full or partial reduction in the GAR required for an addition to a *historic resource* if, in addition to meeting the general requirements of [§3104], the applicant demonstrates that providing the required GAR is impractical as a result of the nature or location of the *historic resource*.

**1507 MAINTENANCE REQUIREMENTS FOR GREEN AREA RATIO**

- 1507.1 All plantings and landscape elements used to calculation a property's GAR must be maintained for the life of the project. If, for any reason, the installed landscape fall below the minimum required GAR score, new eligible landscape elements shall be added to compensate and result in the required ratio.

**PROCEDURES**

The public hearing on this part of Case No. 08-06 will be conducted as a rulemaking in accordance with the provisions of § 3021 of the District of Columbia Municipal Regulations, Title 11, Zoning. The Commission will impose time limits on testimony presented to it at the public hearing.

All individuals, organizations, or associations wishing to testify in this case should file their intention to testify in writing. Written statements, in lieu of personal appearances or oral presentations, may be submitted for inclusion in the record.

Information should be forwarded to the Secretary of the Zoning Commission, Office of Zoning, Suite 200-S, 441 4<sup>th</sup> Street, N.W., Washington, D.C. 20001. Please include the number of the particular case and your daytime telephone number. **FOR FURTHER INFORMATION, YOU MAY CONTACT THE OFFICE OF ZONING AT (202) 727-6311.**

**ANTHONY J. HOOD, KONRAD W. SCHLATER, GREG M. SELFRIDGE, PETER G. MAY, AND MICHAEL G. TURNBULL ----- ZONING COMMISSION FOR THE DISTRICT OF COLUMBIA, BY JAMISON L. WEINBAUM, FAIA, DIRECTOR, AND BY SHARON S. SCHELLIN, SECRETARY TO THE ZONING COMMISSION.**

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