

# GOVERNMENT OF THE DISTRICT OF COLUMBIA

## District Department of the Environment



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### MEMORANDUM

TO: Anthony J. Hood, Chairman, DC Zoning Commission

FROM: Jay Wilson, DDOE

CC: Maxine Brown-Roberts, OP  
Paul Tummonds, Goulston & Storrs  
Brendan Shane, DDOE  
Bill Updike, DDOE

DATE: 1/09/15

SUBJECT: **Z.C. CASE NO. 13-08**  
**Square 5914, LLC and the Washington Metropolitan Area Transit Authority – Consolidated Planned United Development & Related Map Amendment @ Square 5914**

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DDOE reviews planned unit development applications for environmental issues that the applicant should be aware of during early stages of planning, as well as to identify opportunities for increasing environmental and urban sustainability benefits during development.

DDOE does not have comments to the applicant's height or setback requests. Rather, the comments contained herein address issues that the applicant should be made aware of in the early stages of design and entitlement. The items mentioned below are by no means comprehensive, but are a summary of specific items related to the site in question and some common issues that come up with many development projects. DDOE is always interested in meeting with developers and construction companies early in the development process in order to identify opportunities and to help avoid future regulatory problems. The first pages of this report summarize DDOE's comments specific to this development. Additional guidance on regulations, other DDOE areas of interest and recommendations for areas where the applicant could exceed guidelines as a public amenity or benefit follow.



## **General Requirements**

- **St. Elizabeth/ Congress Heights EcoDistrict:**

On June 24, 2014, the Mayor [announced](#) that the District was joining the EcoDistricts “Target Cities” program, led by the three DC communities underway and dedicated to neighborhood-scale projects that emphasize environmental performance, social equity, and economic growth. This development project sits in the center of the St .Elizabets-Congress Heights EcoDistrict, and as a center of the community, and as a development that per the applicant’s statement, will “establish a high level of urban design and architectural quality that will guide future development in the area” this project should also serve as an example of sustainable, energy efficient development.

The EcoDistrict Target Cities program focuses on incorporating sustainability measures more than a single project. However the impact that this project will have on the community are extraordinary. If considered holistically, the project could impact each of the six tenets of the EcoDistrict Protocol – Health & Wellbeing, Livability & Place, Mobility & Connectivity, Ecosystem Health, Resource Efficiency, and Prosperity. The applicant is encouraged to improve the design and be an example for private development within this EcoDistrict. DDOE and OP would be glad to meet with the applicant to discuss opportunities and strategies on both a building and neighborhood scale.

- **Green building**

Given the designation of this area of the city as an EcoDistrict, the applicant is been encouraged to fulfill or exceed LEED certification at the Gold level for both the office and residential portions of the project.

- For the Office tower, the applicant submitted a LEED Checklist showing 40 credits in the easy column, and 25 credits having moderate difficulty, indicating that LEED Gold certification would be possible.
  - Certification for the office tower is required per the Green Building Act (2006).
  - Additional credits should be claimed for EAc1. Energy modeling (required for code) will show that designing to the requirements of the DC Green Construction Code and Energy Conservation Code will be approximately 29% more efficient than the ASHRAE 90.1-2007 code and minimally achieve 9 credits.
  - In addition to the credits identified on the checklist, several credits not identified can be pursued at low- or no-cost to the applicant. A few examples are listed below:
    - SSc6.1: Stormwater Quantity – The applicant is required to retain stormwater for a 90<sup>th</sup> percentile storm (1.2”). By incorporating additional LID infrastructure throughout the plaza, they could manage stormwater for the 95<sup>th</sup> percentile (1.7”) to achieve this credit. This would also qualify for a

bonus Regional Priority credit. In addition, any volume of stormwater managed over the 1.2” requirement will qualify for the Stormwater Retention Credit Trading Program.

- SSc7.2: Heat Island Effect Roof – Since the applicant is planning a green roof, there should be no additional cost. A white TPO roof can also be installed to get this credit.
  - WEc1: Water efficient landscaping – The project renderings show minimal landscaping. Rainwater can be harvested to provide the minimal water required for the green roof and also contribute to SSc6.1.
  - EAc2/ EAc6: On-Site Renewable Energy – As part of the EcoDistrict and to decrease the building’s energy demand, the applicant is encouraged to incorporate on-site renewable energy for at least 3% of the building’s energy usage, or per EAc6, engage in a 2- or more-year contract for at least 35% of the building’s energy use.
- For the Residential tower, the applicant submitted a LEED Checklist showing 39 credits in the easy column, and 21 credits having moderate difficulty, indicating that LEED Gold certification would be possible. Similar to the Office tower, additional credits could be pursued at low- or no-cost to the applicant to improve the LEED rating.
    - Certification is not required for the Residential Tower, but can be pursued as an alternative compliance path to the Green Construction Code. Additional information is included in the general requirements section of this memorandum.
    - In addition to the credits identified on the checklist, and those listed above, several credits not identified can be pursued for a residential project at low- or no-cost to the applicant. A few examples are listed below:
      - WEc3: Water Use Reduction – The baseline per the LEED prerequisite credit and the DC Green Construction Code is a 20% reduction from the IPC code maximum. By installing 0.5 gpm bathroom faucets, 1.5 gpm showerheads, and low- or dual-flush toilets, additional credits can easily be achieved at no cost to the Owner, and no discomfort to the occupant.
      - EAc4: Enhanced Refrigerant Management – The standard HVAC equipment for multifamily development will meet the requirements for this credit.
- **Stormwater Management**

No specific stormwater management narrative or calculations are included with this submission. Guidance as to the regulatory requirements for stormwater management is included in the general requirements section of this memorandum. The applicant should clarify the intended stormwater management strategy and

include baseline calculations to manage at least the required 1.2” rainfall, and is encouraged to retain the 1.7” storm.

## **General Requirements**

The following general guidelines outline regulations and other requirements that the District Department of the Environment would like to make large development projects aware of in order to facilitate the approval and construction process. Opportunities to exceed the requirements of the regulations either for public benefit or to the benefit of the developer are also discussed.

### 1) Green Building

- *General Guidance:* Starting January 2012 (per the Green Building Act of 2006, D.C. Official Code §§ 6-1451.01 et seq.), all private commercial, non-residential projects 50,000 square feet and larger are required to attain, at a minimum, LEED certification at the “Certified” level. In addition, on March 28, 2014, all projects 10,000 square feet and above, and residential projects both 10,000 square feet and 4-stories and higher are required to comply with the DC Green Construction Code (per the 2013 District of Columbia Construction Code).
- *Recommendations:* In addition to the base requirements, DDOE recommends that building owners consider future-proofing their buildings by 1) making building systems as energy efficient as possible; 2) maximizing the efficiency potential of the building envelope; and 3) either installing renewable energy or making the building renewable-ready. Sustainable strategies for accomplishing these tasks are also incorporated into the LEED rating system. These efforts also support several Sustainable DC Plan targets including to reduction of greenhouse gas emissions 50 percent by 2032 and increasing use of renewable energy to 50 percent by the same date.
- *Actions:* The recommendations can be accomplished through a series of smart building and design choices. DDOE is available to meet with the developer and construction companies to consult.
  - i) Overall green building strategy – The project should define and express an overall green building strategy. Integrated design techniques (LEED v4 IP Credits) should be used from the earliest stages of the design process as they have been found to decrease cost and increase performance.
  - ii) Green Building Certification – As mentioned above, this project is required to either meet the DC Green Building Code prescriptive and optional elective point requirements or pursue one of the alternative compliance paths, which include meeting LEED Certification, ASHRAE 189.1 and the National Green Building Standard. Given the opportunity that a project of this scale has to contribute to a more sustainable DC, DDOE recommends that this project exceed those baseline requirements and pursue a LEED v4 Certification at the

Silver level or higher. Given that 66% of the square footage of LEED projects in the District is either Gold or Platinum, this minimal level of certification is commonplace in the marketplace.

- iii) Building systems – Establish specific and measurable energy reduction goals. DDOE recommends that buildings improve energy efficiency by 20 percent over ASHRAE 90.1-2010 to meet the Sustainable DC and Better Building Challenge goals.
- iv) Maximize the efficiency of the building envelope – Limit glazing to 40 percent of the envelope surface and install continuous insulation on the exterior side of the building framing. Include details in the plans and specifications to ensure proper air-sealing and compartmentalization of residential units.
- v) Solar ready – Design for maximizing of solar potential by locating roof structures on the north side of the roof surface, and minimizing other obstructions. The current roof design maximizes potential for green roof and stormwater membership which is applauded and could be combined with opportunities for renewable energy. Consider placement of mechanical equipment to minimize “condenser farms” and maximize benefits for the building and its residents.
- vi) Renewable or alternative energy systems – Include on-site renewable energy to meet 3 percent or more of the building’s total energy need, using solar photovoltaic or hot water, fuel cells, ground source heat pumps, or combined cooling, heating and power (CCHP) systems. The District has some of the strongest financials for solar installations in the country at this moment, and [analysis](#) shows short payback times and high returns on investment.

## 2) Green Area Ratio

- *General Guidance:* The Green Area Ratio (GAR) is an environmental sustainability zoning regulation that sets standards for landscape and site design to help reduce stormwater runoff, improve air quality, and keep the city cooler. All new buildings that require a certificate of occupancy must comply with GAR. Additions and interior renovations to existing buildings must comply with GAR when the cost to construct exceeds 100 percent of the assessed building value within any twelve-month period. Additional information may be found in the [Green Area Ratio Guidebook](#) and on the [DDOE website](#).
- *Actions:* Submit GAR plans for new buildings during the Foundation-to-grade (FD) or Civil (BCIV) permit to allow coordination with stormwater plan review. Submit GAR plans for additions or interior renovations during the Building Permit (B). If a project will take place in multiple zones, we request that it meet the zone requirement with the highest minimum GAR score.

## 3) Stormwater Management

*General Guidance:* The [updated District stormwater regulations](#) have an on-site retention requirement of 1.2 inches per storm event. The regulations offer an off-site Stormwater Retention Trading Program and in-lieu fee options for projects

with retention deficits. The technical Stormwater Guidebook and accompanying compliance spreadsheets provide engineers with detailed guidance on how to comply using individual stormwater management practices. Visit <http://ddoe.dc.gov/swregs> to view and download the regulation, transition guidelines, and the supporting guidance documents.

- *Recommendation:* In addition to the base requirement of 1.2” stormwater retention, DDOE appreciates that this application is a leader for this neighborhood and design on-site retention systems. We encourage participation in the [Stormwater Retention Trading Program](#) for the increased volume of retention up to the 1.7” or 95<sup>th</sup> percentile storms. Stormwater credits are particularly valuable within the AWDZ and can generate income for the project through [credit trading](#).
- *Actions:* The recommendations can be accomplished through a series of smart design choices. DDOE is available to meet with the developer and construction companies to consult.
  - i) Consult the DDOE [Stormwater Management Guidebook](#) (2013) for strategies and guidance for stormwater management design.
  - ii) The project team, including professional Landscape Architect and Civil Engineer is encouraged to schedule an early PDRM at the 65% design stage with DDOE Watershed staff and DDOT public space reviewers to ensure the design maximizes pervious and green surfaces as well as minimizing long-term maintenance costs. Refer to [DDOT’s Green Infrastructure Standards](#) for more information.
  - iii) Integrate low impact development strategies for stormwater management throughout the site, including bioretention areas, green roofs, permeable pavement, curbsless streetscape with vegetated swales, and natural filtration areas. Engineering teams are encouraged to participate in one of the [regularly scheduled training programs](#) on the 2013 stormwater regulations and compliance tools.

#### 4) Water Quality & Use

- *General Guidance:* If the owner of a project will or plans to discharge stormwater and groundwater to District of Columbia municipal separate stormwater sewer system (MS4), the owner must apply for a discharge (Section 402 of CWA) permit from U.S. Environmental Protection Agency (U.S. EPA) and a Section 401 of CWA water quality certification from DDOE Water Quality Division.

Furthermore, as demand on public infrastructure increases, it is vital that new development continue to minimize impact and flow to the MS4. Per the Sustainable DC Plan, the city-wide goal is to reduce potable water demand 40 percent by 2032. Conserving water can help protect the environment, decrease demand on public infrastructure, and provide short- and long-term utility savings for property owners and management. The development narrative and plans do not address water efficiency of interior residential plumbing fixtures or amenities.

Exterior water use should also be considered during construction and for maintenance after construction.

- *Recommendations:* The applicant is encouraged to establish more specific measurable goals for water efficiency. DDOE recommends that the applicant demonstrate through modeling and fixture calculations, a 20 percent potable water use reduction beyond the code requirements. In addition to efficiency measures, initial investment in infrastructure for water reuse; for landscaping, cooling tower make-up, and gray water systems, will save long term utility and maintenance costs. Additionally, use of harvested rainwater for non-potable uses will count toward the project stormwater GAR obligations.
- *Actions:* The recommendations can be accomplished through a series of smart building and design choices. DDOE is available to meet with the developer and construction companies to consult.
  - i) Follow all regulations related to wastewater and stormwater discharge into public infrastructure to minimize quantities and therefore minimize overall impact.
  - ii) Plants should be native and adaptive species in order to reduce potable water demand for irrigation.
  - iii) Rainwater should be captured in cisterns and reused to meet site irrigation needs or for other purposes. Water used for irrigation should be separately metered and have moisture sensors installed.
  - iv) Residential plumbing fixtures should exceed the minimum code requirements, including 0.5 gallon per minute bathroom faucets, 1.5 gallon per minute shower heads, and 1.1 gallon per flush toilets.
  - v) Commercial plumbing fixtures should include dual flush water closets, automatic, metered faucets, and waterless urinals.

## 5) Waste & Toxic Substances

- *General Guidance:*
  - i) Hazardous waste – Prior to any development activities and excavation of soil, a comprehensive environmental assessment is required to verify the presence/absence of contamination at the subject property. All businesses must comply with the RCRA C regulations and law. All businesses that generate a RCRA C regulated waste in the District must have an EPA ID number before work begins. An EPA ID number can be obtained from the hazardous waste program at DDOE. Generally speaking, most businesses will generate at least one regulated waste as fluorescent lamps, mercury-based switches, and abandoned chemical or oil-based paints (among other things) qualify. Based on many inspections and compliance assistance visits, facilities often do not have sufficient space within the facility for storage of fluorescent lamp waste. Facilities will help to avoid future regulatory violations if they allocate space during the design phase.
  - ii) Generators – If a backup generator is planned, space should be allocated during the design phase for proper storage of used motor oil, though non-

combustion back-up generation through fuel cells or battery storage is preferable.

- iii) Construction waste – Per the DC Green Construction Code, all construction projects are required to document that greater than 50 percent of construction waste, including demolition waste, has been diverted from the landfill. In addition, LEED points are awarded for projects that divert 75 percent of waste or greater.
  - iv) Recycling – Per DCMR Title 21, Chapter 20, commercial recycling is required for all properties in the District. Additional information may be found on the Department of Public Works website, <http://dpw.dc.gov/node/418932>.
- *Recommendations:* DDOE recommends establishment of waste management plans applicable both during construction and for long-term property maintenance. Hauling costs per load of recycling waste are typically less than hauling costs of trash waste going to landfill. Regular occupant training can assist to reduce waste and save operational costs.
  - *Actions:* The recommendations can be accomplished through a series of smart building and design choices. DDOE is available to meet with the developer and construction companies to consult.
    - i) Hazardous waste – As a former industrial site, provide documentation of existing hazardous materials through a Phase 1 Environmental Assessment. *Based upon conversations with the Toxic Substances and Natural Resources Divisions here at DDOE, was identified as having contaminated soils. Although there is no open case at this time, the development team must show that either remediation was already completed or that it will be completed during construction.*
    - ii) Establish operational and remediation guidelines for all regulated waste. Note the following and follow-up with DDOE for guidance on additional actions and remediation:
      - (1) If the subject property is listed under the Brownfields listing
      - (2) If there is a pending Leaking Underground Storage Tank (LUST) case or existing underground storage tank (UST) and other environmental enforcement proceedings
      - (3) If there is Recognized Environmental Conditions (REC) at the subject property
    - iii) Construction waste – In order to decrease the demand on area landfills, it is recommended that the developer and contractor exceed the minimum requirements for construction waste and divert a minimum of 75 percent of construction and demolition waste.
    - iv) Recycling – Provide documentation of trash collection rooms with dedicated space for recycling and separation of waste streams. If trash chutes will be installed, include operation guidelines for diverters or separate chutes for recycling.



## 6) Air Quality/ Environment

- *General Guidance:* Per the DC Construction Code and DCMR Title 20, or to meet optional credits under the LEED standard, building projects shall comply with volatile organic compound (VOC) emission limits for paint, coatings, adhesives, flooring, ceiling, and wall systems. In addition, HVAC systems are required to install MERV 11 filters or better. These guidelines contribute to overall indoor air quality and occupant health.
- *Recommendation:* During the design phase, a designer, builder, developer, etc., should review all of the equipment that will be installed in a building and determine whether any of them will emit an air pollutant. Any equipment that burns fossil fuel (gas, oil, coal), applies a coating, uses a solvent, or creates or has the potential to emit dust or other air pollutants should be limited to minimize exposure and emissions during construction and occupancy. Some of this equipment may need to be permitted by the Air Quality Division of DDOE before construction or installation of the equipment can begin.

Note that this requirement includes some temporary equipment associated with the construction, as well as more permanent equipment. Other air quality regulations that must be complied with during the construction phase (as well as during occupancy) include limits on engine idling for a maximum of three minutes (e.g., delivery trucks, dump trucks, semis), limits on fugitive dust (e.g., dust from by vehicles on dirt surfaces, equipment moving dirt around, pile drivers), and limits on odors (e.g., generators exhausting near the street or windows, painting, solvent cleaning, tarring, etc.).

- *Actions:* The recommendations can be accomplished through a series of smart building and design choices. DDOE is available to meet with the developer and construction companies to consult.
  - i) Erosion and sediment control guidelines should stress dust-free construction activity and the contractor should appoint personnel to enforce regulations.
  - ii) The architect should specify zero-VOC paints, adhesives, and sealants to the greatest extent possible. Most products can be specified as a cost neutral substitution for more regularly specified materials.
  - iii) HVAC and ventilation equipment should be specified to ensure proper air exchange and balanced interior air pressure which will limit odors, eliminate moisture, and guarantee healthy air quality.
  - iv) Anti-idling signs should be posted during construction as well as permanently at the loading dock(s) and anywhere else at the site where it is likely that commercial vehicles would idle. Engine idling signs posted on public streets would need to be posted in coordination with the District Department of Transportation (DDOT).
  - v) Existing structures to be renovated or razed are required to perform an assessment of the presence of asbestos-containing materials and conduct the appropriate abatement if such materials are determined to be present prior to the renovation process, if such materials may be disturbed. Any abatement

plan must be approved by the DDOE Air Quality Division and all abatement must be performed in accordance with the requirements of 20 DCMR § 800, Control of Asbestos.

- vi) A backup/emergency generator cannot be used in a reimbursed demand response program (i.e., they are paid to switch from the electricity grid to the generator when requested) unless the generator has had best available control technology (BACT) installed according to DDOE requirements and a permit for use has been obtained from the DDOE Air Quality Division.