

# Implementing Green Building Policies Speakers

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# ARLINGTON COUNTY'S GREEN BUILDING INCENTIVE PROGRAM

Office of Sustainability and Environmental Management Arlington County, VA

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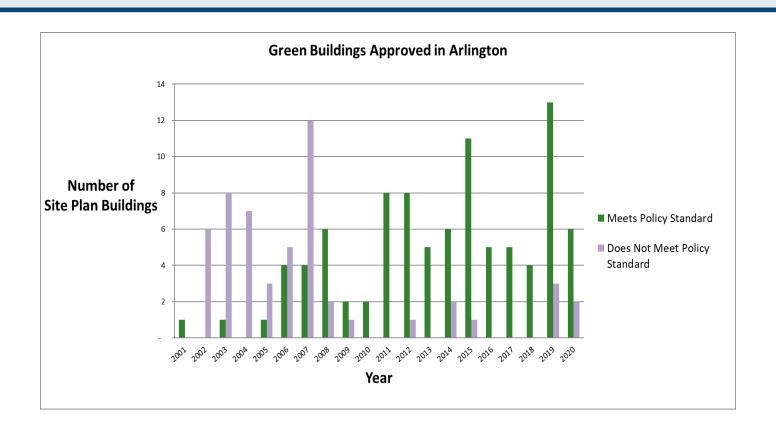




# History of the Green Building Incentive Program (GBIP)

- Purpose: establish a voluntary program to incentivize high-performing buildings beyond state code and Dillon Rule restrictions
- As a voluntary program, the GBIP offers developers variable bonus density incentives in exchange for energy efficiency and sustainability components; first created in 1999 for commercial office projects only
  - In 2003, eligibility expanded to all site plan projects
- Updates between 2009 and 2012 adjusted the levels of bonus density and aligned GBIP energy efficiency goals with the County's Community Energy Plan
- Major update in 2014 required LEED Silver certification, ongoing energy use reporting, and ENERGY STAR post-occupancy certification for offices
- Most recent major update in 2020 requires LEED Gold certification; attention to County priorities such as biophilia, EV charging, diversity/equity/inclusion program, and more; and increased energy efficiency performance and carbon savings to address updated Community Energy Plan goals

### Green Buildings Approved in Arlington



### 2020 GBIP Changes

#### 2014 Policy

- LEED Silver Certification
- Energy Optimization <u>5%</u>
- ENERGY STAR appliances and fixtures
- ENERGY STAR post-occupancy cert. Offices Only
- WaterSense Plumbing Fixtures
- Energy Benchmarking

#### 2020 Policy

- LEED <u>Gold</u> Certification
- Energy Optimization 20%
- ENERGY STAR appliances and fixtures <u>dryers added</u>
- ENERGY STAR post-occupancy cert. all buildings
- WaterSense plumbing fixtures
- Energy Benchmarking

#### **New Prerequisites**

- Renewable Energy (On/Off Site)
- Electric Vehicle Charging Infrastructure
- Air Sealing of Ventilation Supply and Exhaust
- Refrigerant Leakage
- Equity, Diversity, and Inclusion Program
- Human Interaction with Nature (Biophilia)
- Bird-Friendly Materials
- Light Pollution Reduction

### 2020 GBIP Summary Table

0.25 FAR	0.35 FAR	0.45 FAR	0.55 FAR	0.70 FAR
<ul> <li>LEED Gold v4 or v4.1</li> <li>Energy Optimization Performance</li> <li>Baseline Prerequisites</li> <li>ENERGY STAR Score 75</li> </ul>	<ul> <li>LEED Gold v4 or v4.1</li> <li>Energy Optimization Performance</li> <li>Baseline Prerequisites</li> <li>ENERGY STAR Score 80</li> <li>3 Items from Extra List</li> </ul>	Option 1:  LEED Gold v4 or v4.1  Energy Optimization Performance  Baseline Prerequisites  ENERGY STAR Score 85  4 Items from Extra List  OR Option 2:  Baseline Prerequisites  Passivhaus (PHIUS)  Certification	Option 1:  LEED Gold v4 or v4.1  Energy Optimization Performance  Baseline Prerequisites  ENERGY STAR Score 90  3 Items from Extra List  OR Option 2:  Baseline Prerequisites  Passivhaus (PHIUS)  Certification  Carbon Offsets  Renewable Energy plus Storage from Extra List	<ul> <li>LEED Gold v4 or v4.1</li> <li>Energy Optimization Performance</li> <li>Baseline Prerequisites</li> <li>ILFI Zero Energy – or – Zero Carbon Certification</li> </ul>

### 2020 GBIP Extra List Items

Participation in the 0.35 FAR level and above requires 3-6 items from the Extra List. The options include the following:

- Envelope Commissioning and Air Leakage Testing
- Renewable Energy
- Additional Energy Optimization
- Additional Electric Vehicle Charging Infrastructure
- Advanced Energy Metering
- Building Materials Reuse
- Grid Harmonization
- Grid Optimal
- Affordable Housing
- Social Equity within Operations and Maintenance Staff

Participation at the three highest levels (0.45 and above) offers options to use more stringent rating systems, such as; Passivhaus, ILFI Net Zero Energy, and Zero Carbon

### Stakeholder Feedback Topics

- Three-to-five-year review
- Diversity, Equity, and Inclusion
- Requirements for On-Site Solar
- Human Interaction with Nature (Biophilia)
- Bird Friendly Design
- Dark Sky Compliance
- Electric Vehicle Charging Infrastructure
- Building Electrification

## **Case Study**





The approximate 10.4-acre site consists of the following:

- Three office towers of 22 stories with ground floor retail;
- · The Helix; and
- 2.5 acres of open space

Metropolitan Park requested additional density through the County's GBIP at the 0.55 FAR level.

A few sustainability highlights include:

- During construction, 82% (17,000 tons) of all construction waste materials were diverted from landfills.
- The site is powered by 100% renewable energy procured from the Maplewood Solar Farm.
- Using advanced low-carbon concrete and CarbonCure, the project was able to meet a 20% reduction in its carbon footprint.





### **Thank You!**

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### **VAEEC Energy Efficiency Forum Implementing Green Building Policies** in a Dillon Rule State



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**Valerie Amor** City of Alexandria **Energy Manager** valerie.amor@alexandriava.gov



### 15 years of Green Building History





- Eco City Charter (2008)
- Alexandria Green Building Policy adopted (April 2009)
- Environmental Action Plan 2030 adopted (2009)



ssue: Green Building Policy for	Planning Commission Hearing:	April 7, 2009
lexandria	City Council Hearing:	April 18, 2009
lexandria	City Council Hearing:	April 18, 20

Staff: Department of Planning and Zoning, Office of Environmental Quality, Department of General Services, Building and Fire Code Administration and Department of Recreation, Parks and Cultural Activities

#### CITY COUNCIL ACTION

PLANNING COMMISSION ACTION, APRIL 7, 2009: On a motion by Mr. Wagner seconded by Ms. Fossum, the Planning Commission voted to recommend approval of the proposed green building policy, with staff's recommendations outlined in the staff report, and the following: (1) apply the policy to all applications that have not been approved by the Planning Commission and/or City Council by the approval date of the policy, recognizing that the Planning Director may apply flexibility where appropriate, (2) include staff's recommendation for enforcement, and consider a monetary penalty system for non-compliance with the money going to a dedicated fund for green building initiatives, and (3) revise the language of page 16 of the policy report to include "or other factors" with respect to the what the Planning Director may consider for an exemption to the policy. The motion carried on a vote of 7 to 0.

Reason: The Planning Commission agreed with the staff analysis and recommendations.

### 15 years of Green Building History



- Alexandria Green Building Policy adopted (June 2019)
- Environmental Action Plan 2040 adopted (July 2019)
- City Council Climate Emergency Acknowledgement (October 2019)
- Office of Climate Action established (September 2022)
- Energy & Climate Change Action Plan adopted (May 2023)



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#### DEVELOPMENT STANDAR

New proted evelopment, new public development (Clip-owned buildings, including Alexandria City Public Schools) and major monovation: that require a Development Stel Para (ISSP) or a Development Special Use Permit (DSUP) are subject to comply with the Green Building Policy. The Green Building Policy is in effect as of March 2 2020 for DSP and DSUP applications submitted on or after this date.

The 2019 Green Building Policy identifies: 1) the pathways to achieve the City's green building performance standards, including certification through four nationally recognized green building rating systems, 2) a minimum level of green building certification for both private and public developments, and 3) privally "Performance Points" within each nating system that a project is expected to exhibite.

#### RATING SYSTEMS & MINIMUM LEVEL OF CERTIFICATION: LEED. Green Globes. EarthCraft. and National Green Building

Schadard are the standard third-party green building rating systems soccepted under the Green Building Policy. The minimum level of certification for each rating systems is provided 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.

In addition to the LEED, Green Globes, EarthCraft, or National Green Building Standard green building rating systems, projects may choose an atternable path for certification through an independent, third-party certifier. The independent, third-party certifier must verify that the performance standards of the Green Building Policy are met.



paget must achieve within the minimum level of confiduction for the ordested green building rading yellow. Performance Parks in an identified within the sense is the destination of the confidence of the confidence parks and the confidence of the

In addition to the minimum level of certification and the designate Performance Points, public development will meet the followin criteria:

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An energy-efficient building where, on a source energy basis, the schad annual for the control of the

#### PUBLIC BUILDING RENOVATION

For renovations of Chy-owned buildings that do not require a DSP or DSUP, the City will apply LEED Interior Design and Construction (D+C) and LEED Operations and Maintenance (GMM) rating systems as a guideline for Interior design and construction projects and targeted renovations of individual building systems (ag-14HAC roof, windows, plumbing etc.). Actual third-party certification may be used when lecthorizal and financially feasible.

#### FLEXIBILITY:

Plexibility from the Green Building Policy will be considered on case by-case basis. If lexibility is requested, the Clientor of Plannish and Zoding will consider the project size, proposed use and the alternate green building practices the applicant proposes. The project size is a state of the project of the project size of

### **Green Building Public Engagement**



- Stakeholder Engagement
  - Task Force
  - Community Workshops
  - Direct Outreach
  - City Commission Public Hearings
  - Public Comments

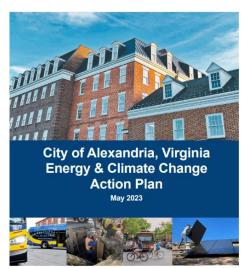




### **Green Building Policy Goals**



- GHGs emissions reductions (base year 2005)
  - 50% by FY2030
  - 80-100% by FY2050
- LEED Silver for private projects
- LEED Gold for public projects
- Performance points for energy & GHGs reductions, water efficiency and indoor air quality







### **Green Building Policy Implementation**



- Applies to All DSUP & DSP approvals new development
- GreenBuilding Certifications:
   LEED, Green Globes, EarthCraft, NGBS
- Detailed Development Conditions
- Sustainability
  - All electric buildings
  - Light colored and green roofs
  - EV charging
  - Energy analysis
  - Renewable energy
  - Water efficiency



# Case Study: PRGS - Coordinated Sustainability Strategy



- Potomac River Generating Station
- PRGS Closure (2012)
- Old Town North Small Area Plan (2017)
  - Create Sustainabilty Master Plan CSS
  - Strive for Carbon Neutrality Designed to IECC 2021 EUI Targets, All-Electric Buildings, Embodied Carbon Reductions
  - Onsite Renewable Energy Production 3% Onsite Renewable Energy Generation
  - Reporting on Building Performance
  - LEED Silver + Performance Points (Blocks & ND)
- Coordinated Development District (CDD) Approval (July 2022)



### **Green Building Policy Outcomes**



- 95% of all new construction complies with Green Building Policy, from 2009 to present
- Currently requiring all electric buildings per development conditions
- Electrification rebates and industry moving in this direction
- First Net Zero elementary and high school
- Alexandria Green Building Policy to be updated 2024
- Pathway: from Prescriptive to Performance



Douglas MacArthur Elementary School



Alexandria City High School

### **Green Building Policy**



### Thank you!

#### **Questions? Comments?**

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#### Climate Change Impacts in Alexandria



Higher average temperatures and more frequent heat waves



More intense storms with heavy rainfall



Sea level rise from the Potomac River inundating coastal areas



More frequent flood events



Extreme winter weather conditions

### Implementing Green Building Policies

### **Audience Q&A**

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