



## BREAKOUT SESSION

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### *Implementing Green Building Policies in a Dillon Rule State*

Implementing Green Building Policies

## Speakers

**Paul Roman**, Arlington County

**Robert Kerns**, City of Alexandria

**Valerie Amor**, City of Alexandria

**Bill Eger**, Arlington County (moderator)

# ARLINGTON COUNTY'S GREEN BUILDING INCENTIVE PROGRAM

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Office of Sustainability and Environmental Management  
Arlington County, VA

October 4, 2023

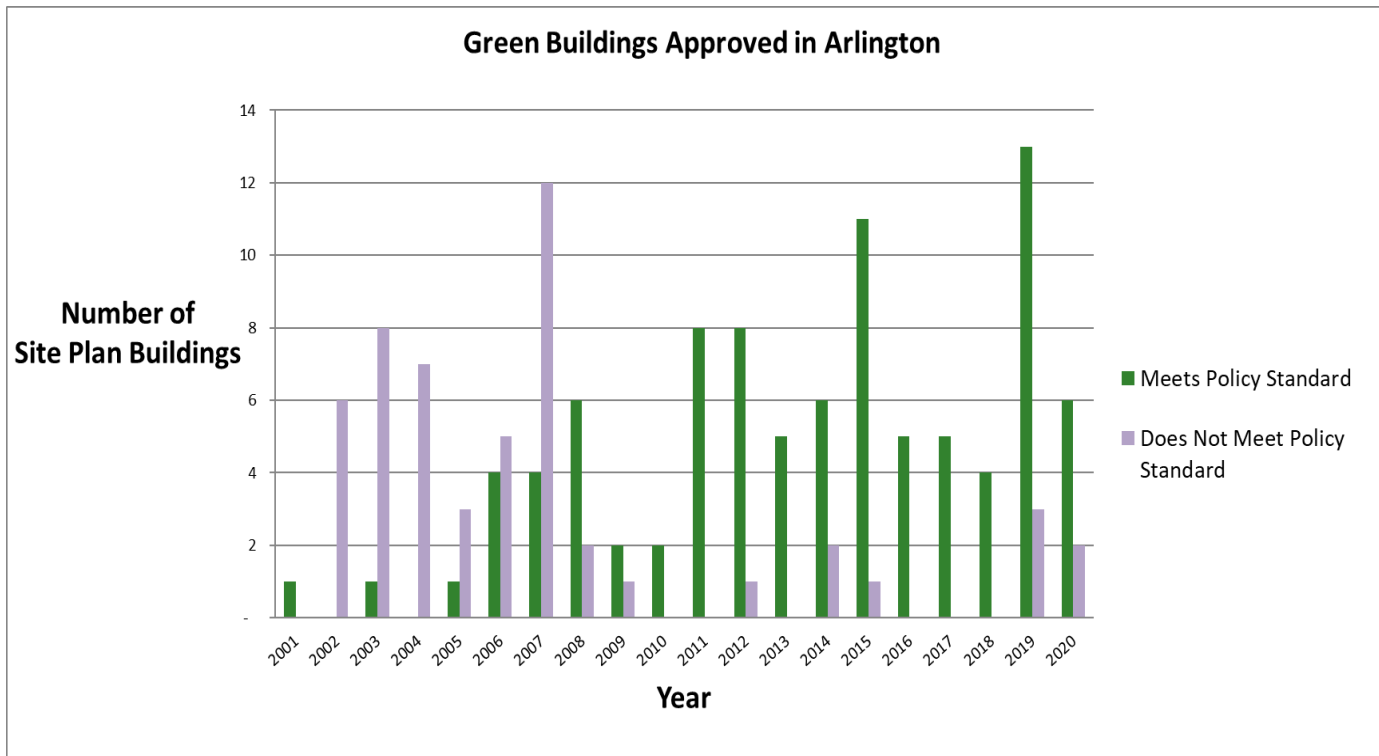


# History of the Green Building Incentive Program (GBIP)

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- 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

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## 2014 Policy

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

## 2020 Policy

- LEED Gold Certification
- Energy Optimization – 20%
- ENERGY STAR appliances and fixtures – dryers added
- 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 style="list-style-type: none"> <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 style="list-style-type: none"> <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>	<p>Option 1:</p> <ul style="list-style-type: none"> <li>• LEED Gold v4 or v4.1</li> <li>• Energy Optimization Performance</li> <li>• Baseline Prerequisites</li> <li>• ENERGY STAR Score 85</li> <li>• 4 Items from Extra List</li> </ul> <p>OR Option 2:</p> <ul style="list-style-type: none"> <li>• Baseline Prerequisites</li> <li>• Passivhaus (PHIUS) Certification</li> </ul>	<p>Option 1:</p> <ul style="list-style-type: none"> <li>• LEED Gold v4 or v4.1</li> <li>• Energy Optimization Performance</li> <li>• Baseline Prerequisites</li> <li>• ENERGY STAR Score 90</li> <li>• 3 Items from Extra List</li> </ul> <p>OR Option 2:</p> <ul style="list-style-type: none"> <li>• Baseline Prerequisites</li> <li>• Passivhaus (PHIUS) Certification</li> <li>• Carbon Offsets</li> <li>• Renewable Energy plus Storage from Extra List</li> </ul>	<ul style="list-style-type: none"> <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

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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

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- 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



An architectural rendering of a modern urban park. The scene is dominated by two tall, glass-clad skyscrapers. In the foreground, a large, triangular-shaped building with a green roof and a wooden deck is filled with people. A wide, paved plaza with a pattern of small, dark, rectangular tiles is also populated with many people. To the right, a multi-lane road with a white bus and several cars is visible. The overall atmosphere is one of a vibrant, modern city space.

# Metropolitan Park



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.







(Rendering: NBBJ)



# Thank You!

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City of Alexandria, Virginia

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



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October 4, 2023



# 15 years of Green Building History



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



EXHIBIT NO. 11

**DOCKET ITEM # 7**

**GREEN BUILDING POLICY**

11  
**4-18-09**

<b>Issue:</b> Green Building Policy for Alexandria	<b>Planning Commission Hearing:</b>	April 7, 2009
	<b>City Council Hearing:</b>	April 18, 2009
<b>Description:</b> Consideration of a request to adopt a Green Building Policy for the City of Alexandria		
<b>Staff:</b> 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:**

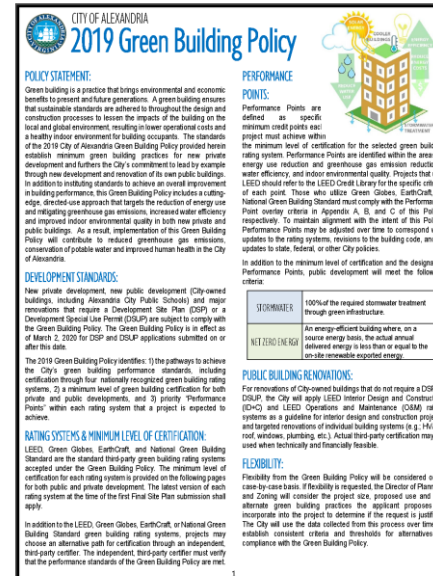
**PLANNING COMMISSION ACTION, APRIL 7, 2009:** On a motion by Mr. Wagner, seconded by Ms. Fossum, the Planning Commission voted to **recommend approval** of the proposed green building policy, with staff's recommendations outlined in the staff report, and the following: (1) apply the policy to all applications 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)



# Green Building Public Engagement



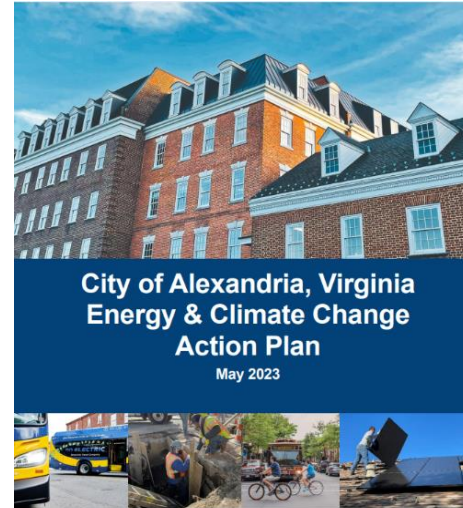
- Stakeholder Engagement
  - Task Force
  - Community Workshops
  - Direct Outreach
  - City Commission Public Hearings
  - Public Comments



# 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 Sustainability 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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