



Building Towards a Resilient Virginia

Using C -PACE Financing to Improve
the Resiliency of Commercial Buildings

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What is C -P A C E F i n a n c i n g ?

Commercial Property Assessed Clean Energy

Covers 100% of the initial cost of resiliency measures as a low interest, long-term loan that attaches to the property.

Enabling Legislation

Code of Virginia § 15.2-958.3

- Enacted in 2009 with a focus on clean energy/energy efficiency improvements

Amendments

2019 - include financing for resiliency and stormwater management measures

2020 - enables the creation of a statewide program option



Photo courtesy of the Alexandria Times



Virginia Localities Utilizing C-PACE Financing

Localities with C-PACE Ordinance

Arlington County, Loudoun County, Fairfax County, the City of Alexandria, the City of Fredericksburg, the City of Lynchburg, the City of Norfolk, the City of Richmond, the City of Petersburg, and the Town of Dumfries


Contrasting Approaches to C-PACE Administration

Fairfax County

- Passed in March 2019 and launched in February 2020
- First locality to make resiliency measures eligible for GPACE financing
- Administered by the Virginia PACE Authority

City of Fredericksburg

- Launched its program in 2018 before the statute was amended to include resiliency measures
- Administered by the City Manager (soon to change to a third party administrator)



Organizations Supporting C-PACE Financing

Virginia Department of Mines, Minerals, and Energy (DMME)

- Developed the underwriting guidelines for localities to follow when implementing their own C-PACE program

Virginia Energy Efficiency Council (VAEEC)**

- Coalition of organizations including local governments, private organizations, and state agencies that work directly with localities to assist them in implementing GPACE programs

Virginia PACE Authority**

- Third-party PACE administration organization
- Certifies that proposed projects meet PACE eligibility requirements, services GPACE loans, registers qualified contractors and lenders

Mid-Atlantic PACE Alliance**

- Partnership in VA, MD, and DC that promotes C-PACE financing
- Provides localities with a toolkit to help them start C-PACE programs

**Model C-PACE ordinance available

Resilient Building Adaptations and Measures

Types of Measures

1. Natural Hydrology
 - Rain Garden; Permeable Asphalt; Permeable Concrete; Stormwater Pond
1. Flood Walls
2. Flood Resistant Construction Materials
 - Metal Doors v. Wood Doors; Vinyl Flooring v. Carpet; Concrete Board v. Wood Paneling
1. Green Roofs
2. Leed Certification Standards
 - “Design for Enhanced Resiliency” measure



Photo courtesy of Riverbend Green Roofs

Resilient Building Adaptations and Measures cont.

Existing vs. New Structures

- Retrofitting existing building involves using “low impact” measures
 - Green roofs, natural hydrology, flood resistant construction materials, and flood walls
 - Honorable mention: flex spaces
- Invasive measures are harder to implement in existing structures
 - Venting
 - Raising structures

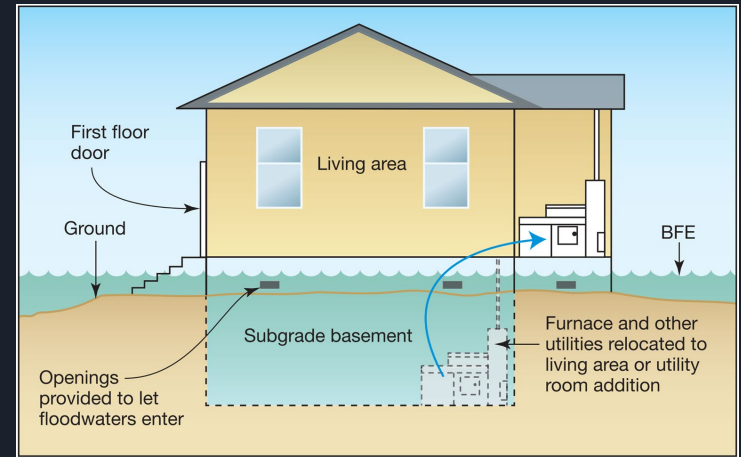



Photo courtesy of Sustainable Buildings Initiative



Case Study - Virginia Beach City Public Schools

Virginia Beach City Public Schools Policy 367 - Environmentally Sustainable Practices

3-67(c)(1)- “Require that all School Division new construction projects and major modernization/renovation projects be designed and constructed to a minimum of LEED (Leadership in Energy and Environmental Design) Certified or equal.”

Facilities Design Department Goals for Rebuild/Retrofit Projects

- Follow through to LEED certification
- Manage stormwater for 10-yr storms (minimum) or 100-yr storms (optimal)
- Design buildings to net-zero energy consumption

Case Study - Virginia Beach City Public Schools cont.

Old Donation School Rebuild

Building Size: 225,000 sq ft

School Population: 1,375 students


Cost of Project: \$63,615,000

Resilient Building Adaptations:

LEED Certification; Green Roof; Rainwater Collection System; Underground Stormwater Storage



Photo courtesy of Virginia Beach Public Schools



Case Study - Virginia Beach City Public Schools cont.

Challenges Faced

- Funding for additional measures
→ solar energy additions

- Political buy-in for resilient infrastructure in excess of code/policy requirements



C-PACE Solutions

- C-PACE provides funding upfront
 - Property owner realizes full benefit of solar savings as compared to power purchase agreement (PPA)

- Presentations to boards of directors can highlight C-PACE's allocation of costs and benefits of additional resilience projects → minimal impact on the bottom line



Case Study - VIA Design Architects

VIA Design Architects

- Private entity eligible for C-PACE financing under Code of Virginia § 15.2-958.3
- Purchased the Essex Building in Downtown Norfolk to house the company's offices
- Norfolk did not have a C-PACE ordinance or program at the time of the retrofit

Goals of Retrofit

1. Restore historic landmark in a way that keeps its historic character but with a modern focus
2. Make historic landmark sustainable for future use

Case Study - VIA Design Architects

The Essex Building

Date of Initial Construction: 1910

Current Use: Offices for VIA Design Architects

Renovation Costs: Several million dollars

Funding Sources: Traditional construction loans;
State and Federal historic preservation tax credits

Resilience/Energy Efficiency Measures:
Siemens Smart System; Variable Refrigerant Flow
HVAC; Regrading of back alley



Photo courtesy of VIA Design Architects



Case Study - VIA Design Architects cont.

Challenges Faced

- Funding for additional measures
→ rainwater retention and recycling system



- High upfront cost of energy efficient measures → VRF HVAC system and Siemens Smart System



C-PACE Solutions

- C-PACE provides funding for resilience and stormwater management measures

- Norfolk's C-PACE ordinance will provide financing for projects ranging from \$50,000 to \$25,000,000 with no initial deposit



Recommendations for Broader C-PACE Implementation in Virginia

Development of Informational Materials for Industry Leaders

- Provide general information in accessible way
- Connect industry with existing C-PACE organizations and administrators

Leveraging Industry Groups and Trade Associations

- Virginia Beach Vision
- Builders and Contractors Exchange of Virginia
- Hampton Roads Association for Commercial Real Estate

Ensuring Accountability

- Statewide Program → DMME and third party administrator
- Enforcement Provision in Ordinance → Arlington County

Questions

Full report can be found at:

<https://law.wm.edu/academics/programs/jd/electives/clinics/vacoastal/reports/cpacefinal.pdf>

