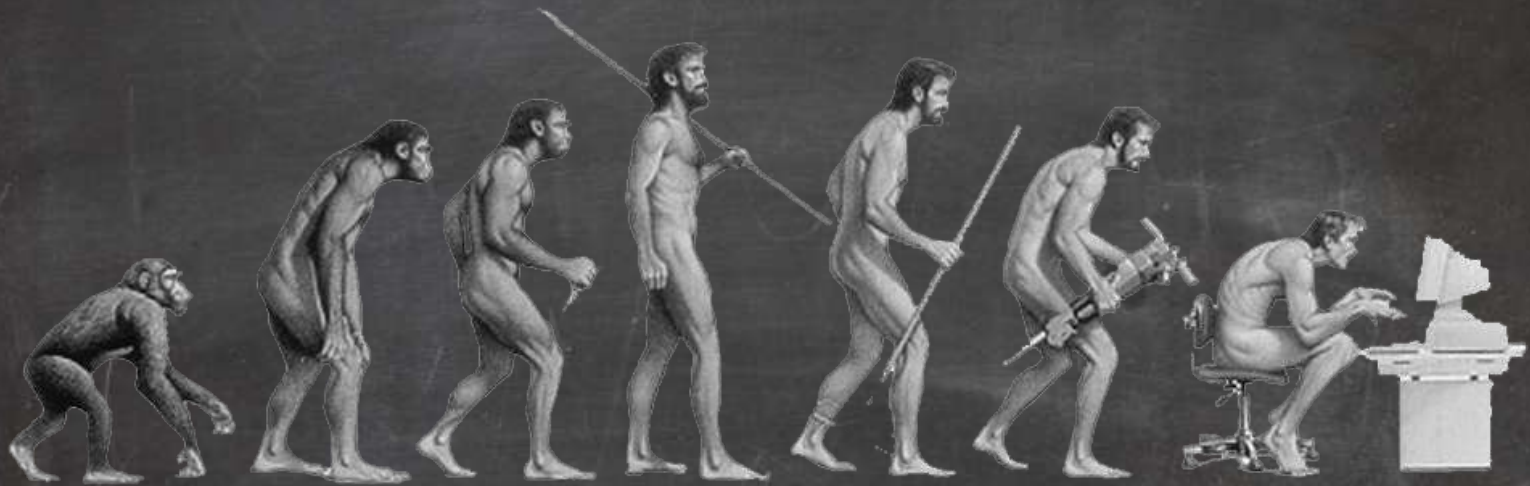


Virginia Beach City Public Schools



Sustainability and the 21st Century Learning Environment

Virginia Beach City Public Schools Sustainability Goals:

1. Develop a sustainable building infrastructure.
2. Integrate sustainable practices throughout the school division.
3. Educate the public about the importance of sustainability.



85 schools

15,000 employees

69,000 students

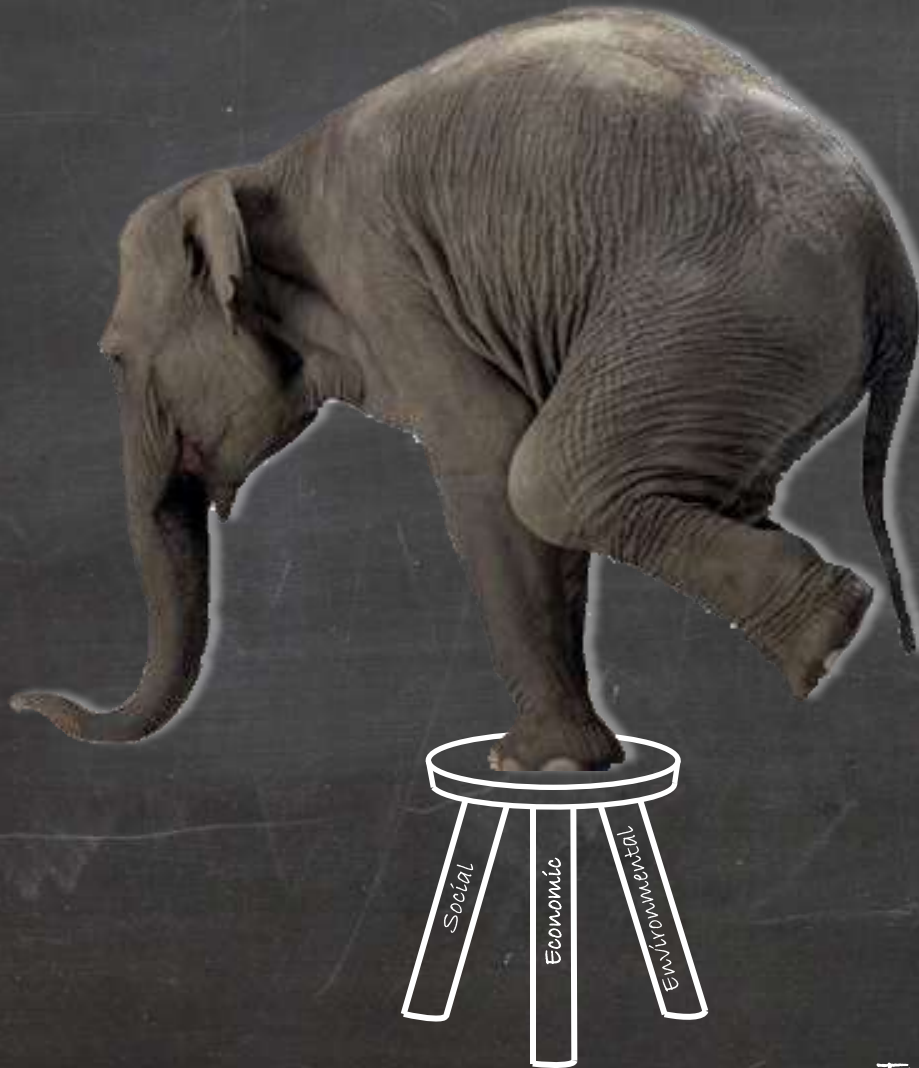
1,800 acres

10 million square feet of building space



Pupil Transportation & Maintenance Facility (LEED Platinum)

Maintaining the balance between, Social,
Economic, and Environmental



Triple Bottom Line

Buildings provide the foundation for all sustainability initiatives.



Great Neck MS
LEED GOLD



College Park ES
LEED Platinum
Pending



Pupil Transportation
LEED Platinum



Virginia Beach MS
LEED Silver



Renaissance Academy
LEED Gold



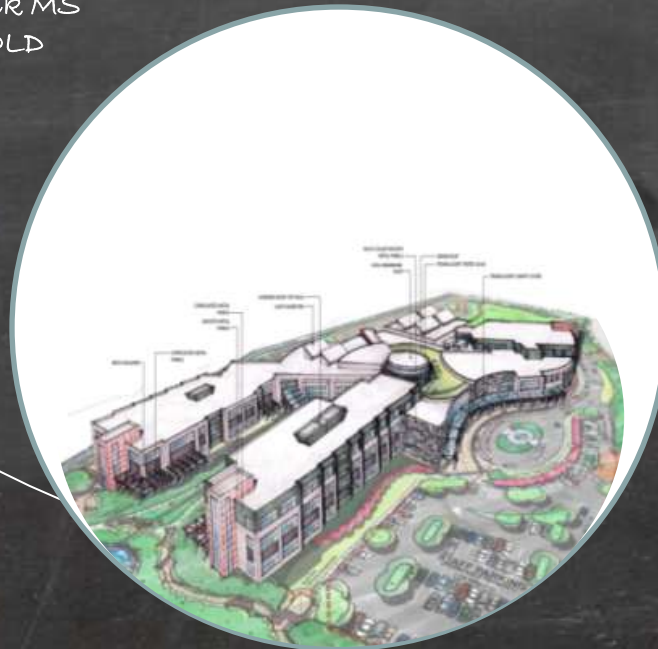
Windsor Oaks ES
LEED Silver



Hermitage ES
LEED Certified



Kellam HS
LEED Gold Pending



ODC/KLMS
LEED Gold Pending

Buildings

Buildings provide the foundation for all sustainability initiatives.



Great Neck MS
LEED GOLD
Pending



College Park ES
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Pupil Transportation
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Windsor Oaks ES
LEED Silver



Hermitage ES
LEED Certified



Kellam HS
LEED Gold Pending

LEED 2009 for Schools New Construction and Major Renovation		WELLS HIGH SCHOOL REPLACEMENT	
Project Checklist		06/22/10	
100 100 Sustainable Sites	Possible Points: 24	Materials and Resources, Continued	
100 100 1	Construction Activity Pollution Prevention	100 100 1	Materials Recycled
100 100 2	Environmental Site Assessment	100 100 2	Recycled Content
100 100 3	Site Selection	100 100 3	Regional Materials
100 100 4	Development Density and Community Connectivity	100 100 4	Rapidly Renewable Materials
100 100 5	Site Specific Remediation	100 100 5	Carbide Wood
100 100 6	Alternative Transportation - Public Transportation Access		
100 100 7	Alternative Transportation - Bicycle Storage and Changing Rooms	100 100 Indoor Environmental Quality	Possible Points: 18
100 100 8	Alternative Transportation - Low-Setting and Fuel Efficient Vehicles	100 100 1	Minimum Indoor Air Quality Performance
100 100 9	Alternative Transportation - Parking Capacity	100 100 2	Environmental Tobacco Smoke (ETS) Control
100 100 10	Site Development - Protect or Restore Habitat	100 100 3	Minimum Acoustical Performance
100 100 11	Site Development - Restore Open Space	100 100 4	Outdoor Air Delivery Monitoring
100 100 12	Stormwater Design - Quantity Control	100 100 5	Increased Ventilation
100 100 13	Stormwater Design - Quality Control	100 100 6	Construction AQ Management Plan - During Construction
100 100 14	Heat Island Effect - Albedo	100 100 7	Construction AQ Management Plan - Before Occupancy
100 100 15	Heat Island Effect - Roof	100 100 8	Low-Emitting Materials
100 100 16	Light Pollution Reduction	100 100 9	Indoor Chemical and Pollutant Source Control
100 100 17	Light Pollution Reduction	100 100 10	Control of Systems - Lighting
100 100 18	Site Access Plan	100 100 11	Control of Systems - Thermal Comfort
100 100 19	Joint Use of Facilities	100 100 12	Thermal Comfort - Ventilation
		100 100 13	Daylight and Views - Daylight
		100 100 14	Daylight and Views - Views
		100 100 15	Enhanced Acoustical Performance
		100 100 16	Wild Protection
100 100 Water Efficiency	Possible Points: 11	100 100 Innovation and Design Process	Possible Points: 6
100 100 1	Water Use Reduction - 20% Reduction	100 100 1	Innovation in Design: SS3.2
100 100 2	Water Efficient Landscaping	100 100 2	Innovation in Design: SS3.1, SS3.2
100 100 3	Water Efficient Fixtures	100 100 3	Innovation in Design: HQ2, HQ3, HQ4, HQ5, HQ6, HQ7, HQ8, HQ9, HQ10
100 100 4	Water Efficient Fixtures	100 100 4	Innovation in Design: HQ10
100 100 5	Water Efficient Fixtures	100 100 5	LEED Accredited Professional
100 100 6	Process Water Use Reduction	100 100 6	The School as a Teaching Tool
		100 100 Regional Priority Credits	Possible Points: 4
100 100 Energy and Atmosphere	Possible Points: 18	100 100 1	Regional Priority: Specific Credits (SS3.1)
100 100 1	Fundamental Commissioning of Building Energy Systems	100 100 2	Regional Priority: Specific Credits (SS3.1)
100 100 2	Minimum Energy Performance	100 100 3	Regional Priority: Specific Credits (SS3.1, SS3.2, SS3.3, SS3.4, SS3.5, SS3.6, SS3.7, SS3.8, SS3.9, SS3.10)
100 100 3	Fundamental Refrigerant Management	100 100 4	Regional Priority: Specific Credits (SS3.1, SS3.2, SS3.3, SS3.4, SS3.5, SS3.6, SS3.7, SS3.8, SS3.9, SS3.10)
100 100 4	Optimize Energy Performance	100 100 5	Regional Priority: Specific Credits (SS3.1, SS3.2, SS3.3, SS3.4, SS3.5, SS3.6, SS3.7, SS3.8, SS3.9, SS3.10)
100 100 5	On-Site Renewable Energy	100 100 6	Regional Priority: Specific Credits (SS3.1, SS3.2, SS3.3, SS3.4, SS3.5, SS3.6, SS3.7, SS3.8, SS3.9, SS3.10)
100 100 6	Subsequent Refrigerant Management	100 100 7	Regional Priority: Specific Credits (SS3.1, SS3.2, SS3.3, SS3.4, SS3.5, SS3.6, SS3.7, SS3.8, SS3.9, SS3.10)
100 100 7	Measurement and Verification	100 100 8	Regional Priority: Specific Credits (SS3.1, SS3.2, SS3.3, SS3.4, SS3.5, SS3.6, SS3.7, SS3.8, SS3.9, SS3.10)
100 100 8	Green Power	100 100 9	Regional Priority: Specific Credits (SS3.1, SS3.2, SS3.3, SS3.4, SS3.5, SS3.6, SS3.7, SS3.8, SS3.9, SS3.10)
		100 100 10	Regional Priority: Specific Credits (SS3.1, SS3.2, SS3.3, SS3.4, SS3.5, SS3.6, SS3.7, SS3.8, SS3.9, SS3.10)
100 100 Materials and Resources	Possible Points: 13	100 100 Total	Possible Points: 100
100 100 1	Storage and Collection of Recyclables		
100 100 2	Building Reuse - Maintain Existing Walls, Floors, and Roof		
100 100 3	Building Reuse - Maintain 75% of Interior Non-Structural Elements		
100 100 4	Construction Waste Management		

The common thread on new buildings

LEED projects range in size from 85,000 sf to 326,000 sf. Total of 1.6 million s.f.

1st LEED Elementary School in VA



Great Neck MS
LEED GOLD



College Park ES
LEED Platinum
Pending



Pupil Transportation
LEED Platinum



Virginia Beach MS
LEED Silver



Renaissance Academy
LEED Gold



Windsor Oaks ES
LEED Silver



Hermitage ES
LEED Certified



Kellam HS
LEED Gold Pending



Hermitage ES
LEED Certified

Pilot building for Green
Cleaning program

1st LEED Gold alternative education school in the U.S.

1st VBCPS building to have solar hot water



Great Neck MS
LEED GOLD



College Park ES
LEED Platinum
Pending



Pupil Transportation
LEED Platinum



Virginia Beach MS
LEED Silver



Renaissance Academy
LEED Gold



Windsor Oaks ES
LEED Silver



Hermitage ES
LEED Certified

1st VBCPS building to use photovoltaics



Renaissance Academy



Kellam HS
LEED Gold Pending

Cool roof system
PACT/UK museum
Daylight harvesting

1st VBCPS building to have a vegetative roof

1st VBCPS building to use rainwater harvesting

1st VBCPS building to use geothermal HVAC

LEED Silver



Great Neck MS
LEED GOLD



College Park ES
LEED Platinum
Pending



Pupil Transportation
LEED Platinum



Virginia Beach MS
LEED Silver



Renaissance Academy
LEED Gold



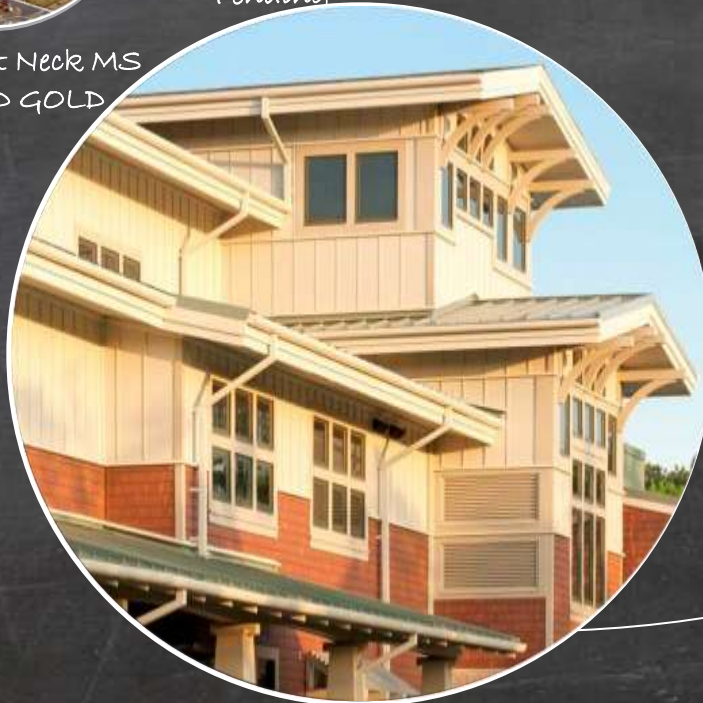
Windsor Oaks ES
LEED Silver



Hermitage ES
LEED Certified



Kellam HS
LEED Gold Pending



Virginia
Beach Middle
Buildings

1st LEED Platinum facility of this type in the country



Great Neck MS
LEED GOLD



College Park ES
LEED Platinum
Pending



Pupil Transportation
LEED Platinum



Virginia Beach MS
LEED Silver



Renaissance Academy
LEED Gold



Windsor Oaks ES
LEED Silver



Hermitage ES
LEED Certified



Kellam HS
LEED Gold Pending

Net-zero runoff on 100
year storm

1st wind turbine project
in VB



Pupil Transportation
& Maintenance
Facility

LEED Platinum pending final
submittal



Great Neck MS
LEED GOLD



College Park ES
LEED Platinum
Pending



Pupil Transportation
LEED Platinum



Virginia Beach MS
LEED Silver



Renaissance Academy
LEED Gold



Windsor Oaks ES
LEED Silver



Hermitage ES
LEED Certified



Kellam HS
LEED Gold Pending



College Park
Elementary

Net-zero runoff on 100
year storm

LEED Gold



Great Neck MS
LEED GOLD



College Park ES
LEED Platinum
Pending



Pupil Transportation
LEED Platinum



Virginia Beach MS
LEED Silver



Renaissance Academy
LEED Gold



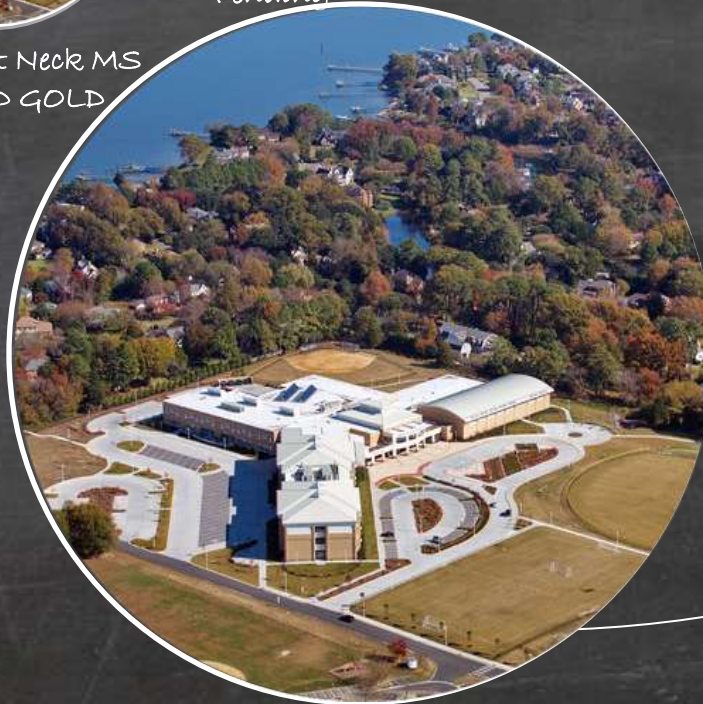
Windsor Oaks ES
LEED Silver



Hermitage ES
LEED Certified



Kellam HS
LEED Gold Pending



Great Neck Middle

LEED Gold Pending



Great Neck MS
LEED GOLD



College Park ES
LEED Platinum
Pending



Pupil Transportation
LEED Platinum



Virginia Beach MS
LEED Silver



Renaissance Academy
LEED Gold



Windsor Oaks ES
LEED Silver



Hermitage ES
LEED Certified



Kellam HS
LEED Gold Pending



Kellam High



Wind Energy



Photovoltaics



Geothermal



Vegetative Roofs



Stormwater Management



Rainwater Harvesting



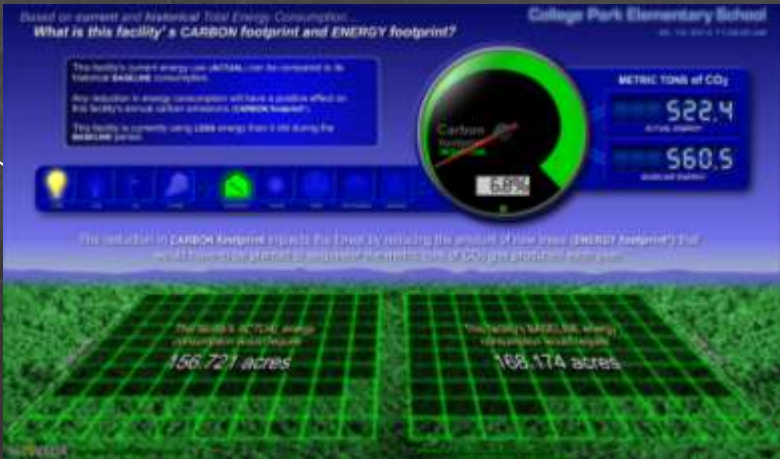
Green Cleaning



Solar Hot Water



Building as a teaching tool



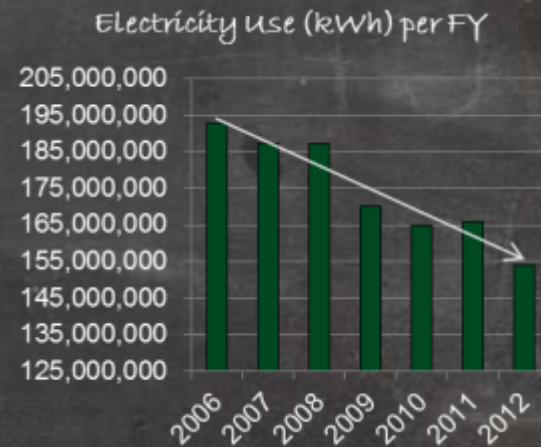
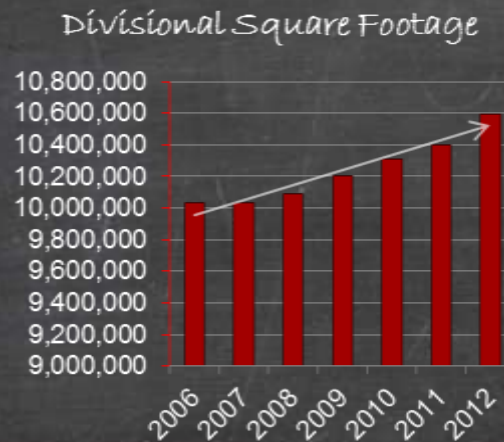
Documentation

- Construction cost
- Utility Cost
- Absenteeism rates
- SOL Scores
- Key Indicators for student success
- Key operating Measures

School Name	Year Opened	Const. Cost	Regional Average	LEED Status	LEED Cost	% of Project
Hermitage Elementary	2005	\$102/SF	\$130/SF	Certified		
Windsor Oaks Elementary	2010	\$168/SF	\$189/SF	Silver		
Renaissance Academy	2010	\$187/SF	\$203/SF*	Gold	\$1.45 Mill	2.2%
Virginia Beach Middle	2010	\$209/SF	\$232/SF	Silver	\$1.17 Mill	2.5%
Great Neck Middle	2011	\$166/SF	\$236/SF	Gold	\$525,000	2.4%
Pupil Transportation	2011	\$185/SF	NA	Platinum	\$375,000	1.7%
College Park Elementary	2011	\$195/SF	\$234/SF	Platinum (Projected)	\$1.48 Mill	1.45%
Kellam High School	2014	\$214/SF	\$232/SF	Gold (Projected)		

Documentation

- Construction cost
- Utility Cost
- Absenteeism rates
- SOL Scores
- Key Indicators for student success
- Key operating Measures



- *Since FY2006, divisional square footage has increased by ~5.6%;*
 - *Electrical use has decreased 20% since that time*



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