



RI Green Buildings Advisory Committee

# Rhode Island Public Green Buildings

2020 Annual Report





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# Letter from the Chair

**To Governor Daniel J. McKee and Leaders & Members of the General Assembly**

On behalf of the Green Buildings Advisory Committee, I am proud to present to you our first Annual Report. In this document you will find an overview of Rhode Island's efforts to green public new construction and large renovation projects. You will also find building-related policy recommendations and case studies of high-performance buildings across the Ocean State.

Back in 2009, Rhode Island was the first State in the country to adopt LEED certification as a required building standard for public construction projects via the Green Buildings Act (RIGL §37-24). In 2017, this Act was further enhanced by establishing a four-year demonstration and evaluation period for using LEED for Neighborhood Development and SITES—two certification systems that apply sustainability and resiliency measures to project sites beyond the buildings themselves. Pilot projects during this four-year period will test the benefits and costs of using site-focused green certifications as compliments to building-focused certifications.

Through Rhode Island's Green Buildings Act requirements, we are ensuring that public construction and large-renovation projects result in high performance buildings. These buildings help to reduce energy use and costs, support the State's greenhouse gas emission reduction goals, and can improve water consumption, indoor air quality, and occupant health. As a Committee we are committed to upholding these green building standards which enable State and municipal construction projects to proudly lead by example.

By coordinating with Rhode Island's Department of Administration, the Building Code Commission, the Office of Energy Resources, National Grid's energy efficiency programs, and many other stakeholders, the Committee has been able to collect initial information regarding project compliance with Rhode Island's Green Buildings Act. The results of this work are included in this report. Data availability remains an on-going issue, but we look forward to improving our tracking year-over-year. We also look forward to continuing our education and outreach efforts to further advance awareness of the Act.

Thank you for your on-going support of green building standards within the State. Through the Green Buildings Act you have not only ensured that new public buildings use less energy and have fewer negative impacts on the environment, but you have also supported the achievement of higher levels of occupant health, productivity, and comfort. We look forward to continuing to enhance our built environment with your support.

Sincerely,



Dr. Becca Trietch

Chair, Green Buildings Advisory Committee



# Letter from the Commissioner

**To Governor Daniel J. McKee and Leaders & Members of the General Assembly**

As the new Building Code Commissioner for the State of Rhode Island, I am honored to provide an update on my Office's efforts to build upon the relationship and continue to work in conjunction with the Green Building Advisory Committee (GBAC). There is no doubt that working collaboratively, the State Building Office and the GBAC can provide more robust educational training opportunities to the state's construction industry professionals, as well as make valuable recommendations to the Building Code Standards Committee on the development of modern codes, tailored to our state's needs.



In 2010, the International Green Construction Code (IGCC) was combined with LEED Certified as an equivalent high-performance standard giving Rhode Island the unique distinction of being the first state in the country to adopt the IGCC. In 2018, the Office of Energy Resources issued the state's first edition of the Rhode Island Stretch Code, based on the 2015 IGCC, which can be used to comply with Rhode Island's Green Building Act (GBA). The State Building Office is committed to taking recommendations from the GBAC regarding education and training processes so that we can deliver valuable training programs to the building officials and inspectors in all thirty-nine cities and towns. It is important that we collectively understand that all public buildings should be built and renovated to save energy, reduce water consumption, improve indoor air quality, and preserve the environment.

The State Building Office is also working with the GBAC to track project compliance via OpenGov, our on-line permitting software. Currently, building permits do not track if a project is publicly owned, nor are there any required fields for the disclosure of the increased standards met in a project. By incorporating additional questions in the permit application, the GBAC and State Building Office will be able to identify those projects that fall into the Major Facility Project category for GBA consideration, as well as the ability to track compliance and identify those projects that may qualify for an exception from the Green Buildings Act's standards.

Sincerely,

James Cambio  
Commissioner  
Rhode Island Building Code Commission

# Rhode Island's Green Buildings Act



On November 9, 2009, the Green Buildings Act (RIGL §37-24) was signed into law. The Act requires that all new construction projects over 5,000 gross square feet, and all renovation projects over 10,000 gross square feet, constructed by a public agency be designed and constructed to LEED Certified or an equivalent high-performance green building standard

In November 2017, the Act was amended to include a pilot phase for using LEED for Neighborhood Development and SITES— two certification systems that apply sustainability and resiliency measures to project landscapes. This pilot phase was expected to last through December 31, 2020, or for up to four (4) pilot projects, whichever came first. Once the pilot phase was complete, any projects that utilized LEED for Neighborhood Development and/or SITES would be evaluated to help determine if the Act should permanently require the use of these site-focused standards.

## Responsibilities of the Green Buildings Advisory Committee

1. Making recommendations regarding education and training processes and ongoing evaluations to the Department of Administration and the Building Code Commission regarding the Green Buildings Act
2. Providing advice and counsel to the Building Code Commissioner in determining if a project is qualified for an exception from the Act's green building standards
3. Providing advice and counsel to the Building Code Commissioner and Department of Administration when determining equivalencies between standards

## About the Green Buildings Advisory Committee

In addition to establishing green building standards, the Green Buildings Act also created the Green Buildings Advisory Committee (GBAC) – a group that provides advice on implementing the Green Buildings Act to the Department of Administration and the Building Code Commission.

### Committee Membership

The GBAC currently consists of 10 members representing the design, construction, lumber and building materials industries as well as personnel from public agencies, school boards, and energy efficiency programs who interface with public works projects. All members are appointed by the Director of the RI Department of Administration.

### Members

James Cambio  
Commissioner  
RI Building Code Commission  
*Code Commission Representative*

Ann Battersby  
Senior Environmental Scientist  
RI Department of Environmental Management (DEM)  
*DEM Representative*

Dr. Becca Trietch, Chair  
Administrator, Energy Efficiency Programs & Policies  
RI Office of Energy Resources  
*Energy Policy Representative*

Dr. Joseph da Silva  
School Construction Coordinator  
RI Department of Elementary & Secondary Education  
*RI Schools Representative*

Stephen Turner, Vice Chair  
President  
Stephen Turner Inc.  
*Building Commissioning Representative*

Arthur Jochmann II  
Chief Property Manager, Pastore Center  
RI Department of Administration – DCAMM  
*State Facilities Representative*

Christopher Armstrong, IGCC Committee Chair  
Director of Building Envelope Science  
PACE Representatives, Inc.  
*RI AIA Representative*

Kevin Rose  
Senior Program Manager  
National Grid – Energy Efficiency, Codes & Standards  
*RI Energy Programs Representative*

Steven Hughes, Education Committee Chair  
Architectural Program Manager  
Tremco Roofing & Building Maintenance  
*Product Manufacturers Representative*

Mark Winslow  
Environmental Solutions Executive  
Gilbane Building Company  
*RI Construction Representative*



# Policy Recommendations

RIGL §37-24-5 requires that the Green Buildings Advisory Committee (GBAC) publish an annual report of findings that includes recommended changes in policy. The GBAC submits the following recommendations that will support Rhode Island's continued leadership in green, high-performance, building practices.

## Policy Recommendations

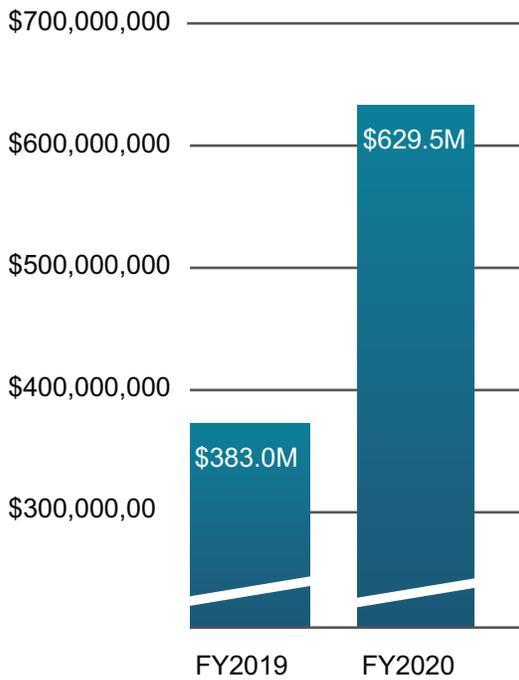
1. **Extend the deadline to complete LEED for Neighborhood Development and/or SITES pilot projects.** Although the State was tasked with completing four pilot projects by December 2020 to determine if compliance with green and sustainable landscape certifications was practical and useful, no pilots have been completed thus far. At least one pilot has been delayed due to COVID-19 and the associated State budget constraints. Without first-hand experience complying with green landscape certifications, it is unclear if achieving these certifications would be overly burdensome or duplicative of existing Rhode Island landscape rules and regulations. Therefore, this Committee requests that the deadline for completing several pilot projects be extended to December 2022. After data and experience have been amassed, this Committee believes it will be able to deliver a more robust recommendation regarding the inclusion of LEED for Neighborhood Development and/or SITES certifications in Rhode Island's Green Buildings Act.
2. **Clarify the Statutory Language of the Green Buildings Act:** Currently, it is somewhat ambiguous if municipalities are required to comply with the Green Buildings Act. It is this Committee's interpretation that the intent was to include municipalities in the implementation of this Act. The language of the Green Buildings Act should explicitly state a municipal requirement for clarity.
3. **Codifying an Executive Order:** Former Governor Gina Raimondo's Lead by Example Executive Order tasked the RI Office of Energy Resources with developing the State's first stretch code – a voluntary building standard that supports building energy efficiency and green building practices. The stretch code was created with the help of the Green Buildings Advisory Committee. Ideally, the stretch code should be updated every three years to ensure that it stays ahead of base building codes. Adding this requirement to the Green Buildings Act is strongly recommended.

# Rhode Island Public Schools

## Compliance



## RI Public Schools Excel in Green Construction



Under the Green Buildings Act, Rhode Island public schools must be built to a green school standard – Northeast Collaborative for High Performance Schools (NE-CHPS). Rhode Island’s Department of Education (RIDE) and the School Building Authority (SBA) ensure compliance with this standard by incorporating NE-CHPS into their school construction and renovation funding requirements. All financial awards over \$500,000 from the Housing Aid Program must use NE-CHPS and must pass a construction plan review by state government officials.

In FY 2019 and 2020, over \$1 billion in funding approvals was provided for school new construction and renovation projects. A large portion of this funding, if utilized will meet NE-CHPS and thereby comply with the Green Buildings Act.

Above: Total school construction and renovation approvals.

# School Green Construction – Nationally Recognized



The national Green Ribbon Schools program recognizes and awards schools that are leaders in three categories: 1) reducing environmental impact and costs, including waste, water, energy use and alternative transportation; 2) improving the health and wellness of students and staff; and 3) providing effective sustainability education. Awards are presented by the U.S. Department of Education.

Each year, the School Business Authority draws from a list of Rhode Island schools that have complied with the Green Buildings Act for their annual award nominations. Since 2012, thirteen Rhode Island schools and colleges have successfully achieved Green Ribbon status. Such achievement has been made possible by the energy efficient and sustainable construction requirements of Housing Aid funding and the integration of green school features into educational curricula.

## Benefits for Students

### **High-performance schools are healthy schools**

With an average age of 56 years, Rhode Island school buildings present ample opportunities for cost-effective energy investments that can improve air quality, ventilation, lighting, and acoustics.

### **Improve air quality**

Good air quality is critical for health. Poor air quality can induce asthma attacks, increase absenteeism due to illness, and provide an uncomfortable environment for people with pre-existing respiratory conditions.

Improving indoor air quality can help keep students, teachers, and staff healthy and safe.

### **Reduce absenteeism**

Healthy students are able to attend more days of school.

Asthma is a leading cause of absenteeism among students, accounting for 13.8 million missed school days per year nationwide.

### **Healthy students learn better**

More days in school can improve education outcomes.

Better indoor air quality, lighting, and acoustics make the classroom more comfortable and an easier place to learn.

# State Government

## Compliance



## State Government – Leading by Example

From January 2018 through December 2020 the major renovations and new construction projects shown in the following table were undertaken by the Division of Capital Asset Management & Maintenance (DCAMM) and other state agencies. Those shown in green met or exceeded the Green Building Act standards.

Although, not all projects complied with the Green Buildings Act. All projects did actively pursue energy saving measures and met or exceeded base code requirements. More information about how the Office of Energy Resources has partnered with a variety of state agencies including DCAMM to improve the energy use in state buildings can be found at <http://www.energy.ri.gov/policies-programs/lead-by-example/>.

Moving forward, the Green Buildings Act requirements have been fully integrated into the design and construction processes at DCAMM. In addition, recommended RFP language is available on the Green Buildings Advisory Committee web page (<http://www.ribcc.ri.gov/gba/>) to assistance any public entity drafting a scope of work for a large renovation or new construction project.

	Building/Project Name	Campus-City Location	Square Feet	Achieved Green Building Standard	Notes
Major Renovation Projects	Virks Building	Pastore - Cranston	57,434	LEED Certification, EnergyStar Certification	
	Zambarano Hospital	Zambarano - Burrilville	132,825	LEED Certification, EnergyStar Certification	Window replacement & masonry restoration project
	Barry & Simpson Halls	Pastore - Cranston	100,000	Base Code Compliant	Energy saving measures such as LED lighting and controls were installed. In addition, new HVAC, windows, electrical and elevator replacement were part of the project.
	Benjamin Rush	Pastore - Cranston	25,620	Base Code Compliant	Energy saving measures such as LED lighting and controls were installed. In addition, new HVAC, windows, electrical and elevator replacement is part of an on-going project.
	Roosevelt Benton Center	Pastore - Cranston	33,000	Base Code Compliant	Energy saving measures such as LED lighting and controls were installed. Retro-commissioning measures were also completed
	Center General Buildings. (Buildings 68-73)	Pastore - Cranston	225,000	Base Code Compliant	New roofs on buildings 68-71. Total LED lighting retrofit for all six buildings. Design plans completed for new windows and remaining roof replacement for buildings 72&73
	Campus Lighting Replacement	Pastore - Cranston	400 Acres	Additional non-building Related	All of the exterior lighting including all of the high tower Department of Corrections (DOC) facilities, street, building, & parking area lighting.
	RI State Police Barracks	Lincoln	12,000	IGCC 2012	
	Regan Hospital	Pastore - Cranston	104,000	Designed to achieve LEED Certification	
New Construction Projects	Veteran's Home	Bristol	260,000	IGCC 2012+ plus 10% energy savings above code	Achieved 10% energy savings above code
	Attorney General – Customer Service Center	Pastore - Cranston	26,700	LEED Silver Certification, EnergyStar Certification	
	RI State Police Safety Complex	Scituate	55,000	Certified LEED Silver	
	Camp Fogarty	East Greenwich	80,688	Designed to achieve LEED Certification	
	Fire Academy Phase II	Exeter	12,000	IGCC 2012	



# Data Sources & Constraints

The necessary data to calculate overall compliance rates with the Green Buildings Act were not readily available at the time of this report. Currently, the state lacks a comprehensive database with the relevant information on all public new construction and large renovation projects needed by the GBAC. Building permits, although issued for all building construction projects, do not currently track if a building is publicly owned and do not require the disclosure of any above-code standards obtained by a project. Therefore, this report has relied on requesting information from several, separate organizations to provide a preliminary view of compliance.

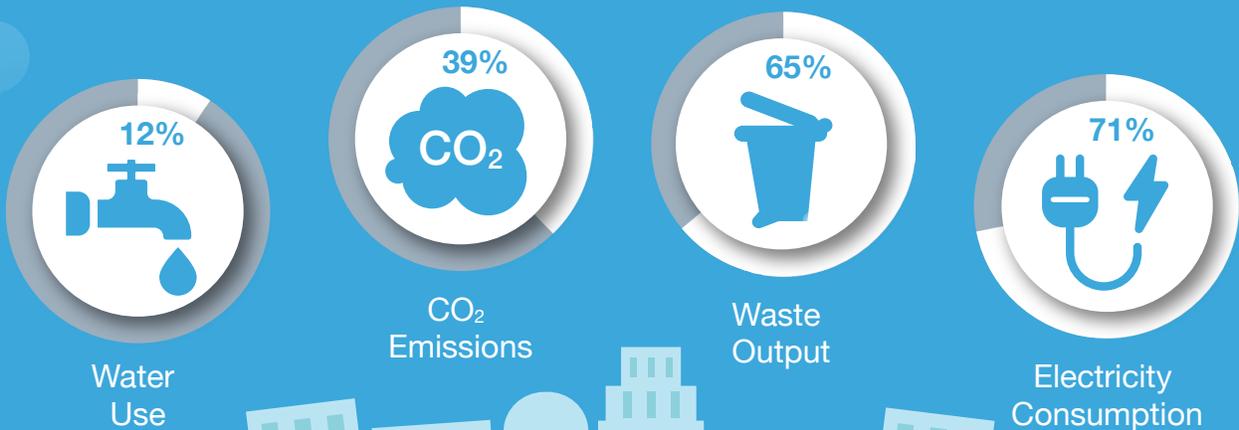
This report provides a comprehensive view of all large renovation and new construction projects managed by the Division of Capital Asset Management and Maintenance or funded by the Rhode Island School Building Authority. Buildings constructed or renovated by other public entities are not included. The Committee believes that the largest gap in green building standard data is from municipal, public university, and quasi-public projects.

To address this issue, the GBAC is working with the RI Building Code Commission to begin tracking Green Buildings Act compliance via the online state permitting system. Once this system is in place, the Committee will be able to present a more complete picture of compliance. However, reporting for the act will continue to rely on voluntary compliance by municipalities. Future reports will contain municipal project information requested by the advisory committee and provided by municipalities. The Committee will continue to investigate ways to improve data collection overtime.

# Rhode Island Public Green Buildings 2020

## At-A-Glance

### The impact of U.S. buildings on our resources



### Complying with the Green Buildings Act saves at a minimum



#### Benefits

- < Provides for improved indoor air quality
- < Requires the use of sustainable building materials
- < Requires sustainable site development strategies

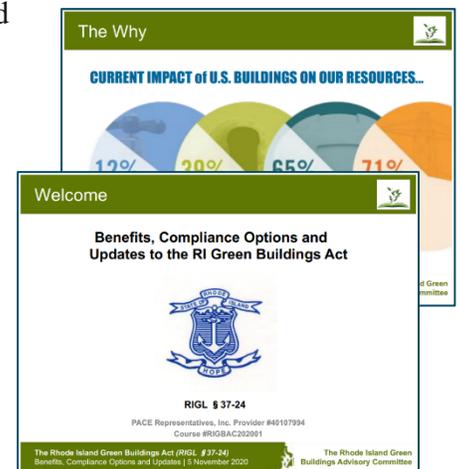
# Outreach & Collaborations

## Education & Outreach

Each year, the Green Buildings Advisory Committee works to increase awareness of Rhode Island’s Green Buildings Act.

Public presentations, educational materials, and trainings are provided for code officials, municipal planners, engineers, architects, and the general public in collaboration with Rhode Island’s Building Code Commission and the state’s energy efficiency programs. Recent educational presentations are posted on the Green Buildings Advisory Committee webpage: <http://www.ribcc.ri.gov/gba/>.

Throughout 2019 and 2020 substantial outreach was done through National Grid’s energy efficiency code trainings on Rhode Island’s voluntary stretch codes which provide a pathway for compliance with the Green Buildings Act. Committee members also recently collaborated with the Rhode Island League of Cities & Towns to provide information about the Act to municipal officials.



## Supporting Building Code Advancement

In addition to outreach efforts, Committee members also strive to provide feedback and recommendations to the Building Code Commission and Building Code Standards Committee during base code review and adoption. Approximately once every three years, Rhode Island’s Building Code Standards Committee reviews and updates the mandatory, state-wide, minimum codes which govern all non-public new construction and large renovations in Rhode Island. As experienced professionals in the latest green building techniques, Green Building Advisory Committee members and their respective organizations strive to provide insights and recommended code amendments to the Building Code Standards Committee during the public code review and adoption process.

# Appendix A: Exemplars

## Veterans Home - Bristol

In Bristol a new state-of-the-art facility, which houses 208 veterans, replaced a previous Veterans Home built in 1955.

On top of the new Veterans Home is a 168-panel rooftop solar array. With a 43.7 kW capacity, the annual carbon emissions savings from this installation equals driving a car 96,394 miles!

The building also exceeds Rhode Island's energy efficiency code requirements with some of these green enhancements:

- Occupancy and daylight sensors to control lighting use
- Extra building insulation
- Low flow plumbing fixtures that reduce water use by up to 30%
- Automated hot water recirculating systems to optimize energy use
- Use of high solar-reflecting outdoor landscape to reduce the "heat island" effect
- Recycling of 70% of the construction waste



## Pastore Complex – Cranston



In June 2020, the Rhode Island Office of Energy Resources (OER), Department of Administration (DOA), Division of Capital Asset Management and Maintenance (DCAMM) and Department of Corrections (DOC) completed a collaborative project to upgrade the exterior lighting at the John O. Pastore Complex to current LED technology.

The project will help reduce annual greenhouse gas emissions by 811 tons, equivalent to removing 159 vehicles from the road for one year, on average. Approximately 1,100 fixture upgrades were completed – including street and walkway lighting, wall-packs, parking lot lighting, and flood lighting.



# Archie R. Cole Middle School

East Greenwich, Rhode Island



Photo Credit: Symmes Maini & McKee Associates (SMMA)

## General Information

**Location:** 100 Cedar Ave. East Greenwich, RI  
**Scope:** 110,000 square feet of new construction  
**Cost:** \$32 million  
**Completion:** August 2011  
**Enrollment:** 573 students grades 6th to 8th  
**Architect & Engineer:** SMMA  
**Funding/Grant:** National Grid Design 2000plus rebates for lighting, VFDs and ECM motors  
**Award:** AIA RI Chapter Honor Award 2012  
**Certification:** NE-CHPS

The three-story, 110,000 square-foot facility is designed according to the **Northeast Collaborative for High Performance Schools (NE-CHPS) Criteria**, which is based on California's version of the **CHPS** guide to building energy efficient, environmentally friendly, and healthy school facilities. The integrated design of the school takes into account the surrounding residential neighborhood and high-performance elements that make the building 30 percent more energy efficient than code (70 kBtu/sf).



**Reduction in energy costs will yield over \$182,000 in savings annually.**

## Project Overview

The construction of **Archie R. Cole Middle School** commenced in 2009 after receiving the approval from the town residents. In the preceding year, East Greenwich voters had approved to take out a 30-year, \$52 million construction bond to build the new middle school and fix up the district's school facilities. The new middle school which was built adjacent to the old junior high school, a facility built in the 1950s and opened in 2011 to accommodate over 570 students in 6th, 7th and 8th grade, while the old building only had room for grades seven and eight.

The school's plan is on an east-west axis to optimize solar orientation while long, sloping roofs allow for rainwater harvesting. The project's design maximizes the use of natural daylight through special glazing, skylights and clerestory with daylight sensors, and sunshades on the building's southern façade used to control sunlight.

## Archie R. Cole Middle School

East Greenwich, Rhode Island



The school's configuration along an east-west axis helps to optimize solar orientation

Other high-performance features include the use of computerized maintenance and energy management system, demand-control ventilation to reduce need for air conditioning, and a 50 kW solar photovoltaic system to offset electricity use. The building is used as a learning tool through the use of signage and electronic output from the energy management system. Interactive tools inside and outside of the classroom allow sustainability elements to be integrated into the school's curriculum.



Building design maximizes use of natural daylight



"School as a Teaching Tool"

### Sustainable Design Elements

#### Site

- Design integrated with the residential community by locating the highest point of the building central to the site
- Project sited to preserve wetlands, protect greenfields, and avoid floodplains
- Light pollution reduction

#### Materials

- 14 percent of materials were recycled content
- 35 percent of materials are locally produced
- 88 percent of wood came from FSC sources

#### Water

- Efficient interior fixtures reduced total water use by 40 percent combined with rainwater harvesting for 67 percent annual water savings

#### Energy

- East-west orientation optimizes solar orientation
- High performance glazing systems and fenestration designed to optimized daylight harvesting; Occupancy sensors
- Operable windows in classrooms
- High performance lighting; 30 percent above code
- Super insulated, cool roof
- Control-demand ventilation minimizes air-conditioning need
- Computerized maintenance management and energy management system
- Dedicated exhaust and premium filtration
- 50 kW solar photovoltaic system

This case study was prepared by NEEP with information provided by Symmes Maini & McKee Associates (SMMA). To learn more about this project, please contact Ed Frenette ([efrenette@smma.com](mailto:efrenette@smma.com)) or Lorraine Finnegan ([lfinnegan@smma.com](mailto:lfinnegan@smma.com))

For more information about NE-CHPS, contact Carolyn Sarno, NEEP Senior Program Manager, High Performance Buildings, at [csarno@neep.org](mailto:csarno@neep.org) or 781-860-9177 ext. 119.



# Claiborne Pell Elementary School

Newport, Rhode Island



Photo Credit: Newport Public Schools

## General Information

**Location:** 35 Dexter Street Newport, RI 02840

**Scope:** 105,565 gross square feet of new construction

**Cost:** \$28 million

**Completion:** 2013

**Enrollment:** 865 PK-4th graders

**Architect:** HMFH Architects, Inc.

**Engineer:** Garcia Galuska Desousa Engineers Inc.

**Certification:** NE-CHPS Verified;  
US Department of Education Green Ribbon School

## Project Summary

Opening in time to welcome over 865 pre-kindergarteners through fourth graders for the 2013-2014 school year, the **Claiborne Pell Elementary School**, located in Newport, RI, is the newest high performance school facility in the state. The Pell Elementary School provides a safe and healthy 21<sup>st</sup> century learning environment and replaces the city's four aging elementary schools. The new two-story school building includes a PK-1 Lower School and a 2-4 Upper School supported by a shared cafeteria, gymnasium, and media center.

## Claiborne Pell Elementary: A Verified Green School

The Pell Elementary School has recently been verified by the Rhode Island Department of Education as a Green School built in accordance with the **Northeast Collaborative for High Performance School (NE-CHPS)** criteria. Besides meeting all the prerequisites, the facility also pursued 29 additional elective credits to achieve:

- Energy performance 50 percent above code (ASHRAE 2009) with projected savings of \$116,855 annually.
- 35.35 kBtu/s.f./yr
- 40 percent reduction in portable water use
- Effective lighting, thermally comfortable, and healthy indoor air



Northeast Energy Efficiency Partnerships 91 Hartwell Avenue Lexington, MA 02421 P: 781.860.9177 [www.neep.org](http://www.neep.org)

# Claiborne Pell Elementary School

Newport, Rhode Island



Below is a summary of some of the sustainable design elements and high-performance features of Pell Elementary School:

## Site

- **Building orientation:** Classroom wings are oriented on an east-west axis, reducing the cooling load and allows for maximized daylighting without glare.
- **Site selection:** The new building is located on the site of a former school, eliminating the additional disturbance of undeveloped lands.



Ribbon cutting for the dedication of the new Claiborne Pell Elementary School  
Photo Credit: Dave Hansen ([newportri.com](http://newportri.com))

## Energy

- **Building Envelope:** Well-insulated walls and roofs provide a compact envelope. High-performance double glazed windows tailored to different solar orientations to maximize visible light transmission while reducing solar heat gain.



- **Lighting:** More than 77% of classrooms are designed to effectively utilize daylighting and replace at least 25% of total electrical illumination. The building also incorporates daylight dimming and low-wattage light fixtures along with occupancy sensors.

- **Energy Management System:** An automatic temperature control and building energy management system provide system controls, monitoring and feedbacks, and enable communication with a town-wide energy management system.

- **Air Ventilation System:** A displacement ventilation system delivers clean air supply. Energy recovery and variable frequency drive (VFD) fans provide a comfortable indoor environment during the summer without the need for air conditioning.

- **Heating system:** The boilers are high performing condensing type with energy efficient VFD pumps.

## Water

The combination of low-flow, dual-flush plumbing fixtures and the selection of drought resistant plantings result in a reduction of potable water use by over 42%.

## Materials

The building materials meet or exceed the interior low VOC, recycled content and regionally produced goals in NE-CHPS. Over 80% of construction and demolition waste was recycled.

## Acoustics

Designed building spaces meet or exceed ANSI 12.60 for Classroom Acoustics background noise, reverberation time, and room to room sound isolation. High performance ceiling tiles and wall panels provide effective noise absorption.

*This case study was prepared by NEEP with information provided by HMFH Architects, Inc. To learn more about this project, please contact Paul Fagan, Director of Facilities, Newport Public Schools ([paulfagan@newportrischools.org](mailto:paulfagan@newportrischools.org)). For more information about NE-CHPS, contact Carolyn Sarno, NEEP Senior Program Manager, High Performance Buildings, at [csarno@neep.org](mailto:csarno@neep.org) or 781-860-9177 ext. 119.*

## Project Funding

The project was funded in part by the RI Department of Education. Additional energy efficiency rebates were provided by National Grid for high efficient lighting and VFD.

Newport Public Schools is currently pursuing a RI Office of Energy Resources grant to install a 100kW rooftop photovoltaic system that was designed for this project.

# Nathan Bishop Middle School

Providence, RI

*“Historic buildings can be high performance”*



## Project History

Nathan Bishop Middle School is an existing 4-story Georgian Revival Style building constructed in 1929. It was one of the first projects designed under the new RI-DOE regulations, which included the adoption of the NE-CHPS protocol.

Nathan Bishop was on the top of Providence Preservation Society’s 2007 Most Endangered Properties List, but was recently taken off the list as a result of close collaboration between the City of Providence, School Department, East Side Community, Providence Preservation, RIDE and the professional team. Nathan Bishop will open in the fall of 2009 as a High Performance Historic Building.



Nathan Bishop - Existing Building

Nathan Bishop Middle School was designed by Architecture Involution, Inc (Ai3). Information and imagery provided by Ai3.

## Northeast-CHPS Scorecard for Nathan Bishop Middle School

	NE-CHPS Protocol Required Credits	Nathan Bishop Proposed Credits
Policy & Operations	2	2
Indoor Environmental Quality	4	11
Energy Efficiency	2	7
On-Site Renewable Energy	0	1
Water Efficiency	1	9
Sustainable Materials	3	7
Site Selection & Layout	2	7
Innovation	0	2
<b>Total</b>	<b>14</b>	<b>45</b>

The Northeast High Performance Schools Protocol (Northeast-CHPS) is a building criteria administered by NEEP to provide premium educational environments and meet state mandates and performance based incentive programs for new school construction and renovation. Northeast-CHPS is consistent with the best national practices for designing and building energy efficient, sustainable, high performance green schools.

Northeast Energy Efficiency Partnerships | 5 Militia Drive Lexington, MA 02421 | P: 781.860.9177 | www.neep.org

# Nathan Bishop Middle School

## High Performance Features



### Indoor Environmental Quality

- 100% classrooms have access to views
- 100% classroom include day lighting strategies
- Low-glare lighting systems throughout
- Permanently installed entryway walk-off system (15 feet in length)
- 100% classrooms comply with the enhanced acoustical requirements (ANSI 12.60-2002)

### Water Efficiency

- Single temperature fittings for student toilet rooms and locker rooms.
- Low flow toilet fixtures
- NO irrigation for landscaping
- Use of 20,000 gallon rainwater collection system for toilet flushing.

### Energy Efficiency

- 40% energy savings (as measured in energy) over a comparable baseline building that meets the requirement of ASHRAE standards
- Projecting a savings of over \$90,000 in annual operating costs.

### Sustainable Materials

- Environmentally friendly - low-emitting VOC materials
- On-site recycling program
- Recycle, reuse and/or salvage of greater than 50% of non-hazardous construction and demolition waste
- Building Re-use

### For more information, contact:

Carolyn Sarno, Senior Program Manager, NEEP, [csarno@neep.org](mailto:csarno@neep.org)

Troy L. Randall, AIA, LEED AP, Principal, Architecture Involution, Inc., [randall@ai-3.com](mailto:randall@ai-3.com)

Joseph Paul da Silva, AIA, Rhode Island Department of Education, [Joseph.DaSilva@ride.ri.gov](mailto:Joseph.DaSilva@ride.ri.gov)

Northeast Energy Efficiency Partnerships | 5 Militia Drive Lexington, MA 02421 | P: 781.860.9177 | [www.neep.org](http://www.neep.org)



**Paul W. Crowley Metropolitan Regional Career and Technical Center**  
Newport, Rhode Island

**General Information**

**Location:** 115 Girard Ave., Newport, RI 02840  
**Scope:** 16,800 square feet, new construction  
 5,000 sqft of sheltered exterior program space  
**Cost:** \$8.8 million (including land purchase)  
**Completion:** January 2014  
**Enrollment:** 180 high school students  
**Project Team**  
 Architect: Robinson Green Beretta Co.  
 Engineering: Odeh Engineers/ Stantec, Inc.  
 Construction: Gilbane, Inc.



**Project Overview:**

The **East Bay MET School**, located in Newport, Rhode Island, was designed as the first net-zero public school facility in the region. The brand-new, state-of-the-art, 16,800 square-foot facility opened for classes in early 2014 and accommodates 180 high school students and 25 staff.



In order to achieve zero net energy, the building is designed to take advantage of renewable energy sources available on site and minimize energy consumption with an air-tight, well-insulated exterior envelope. The staffs and students at East Bay MET School are also committed to the efficient use of the facility by exploring innovative ways of using the building as a teaching tool to learn about sustainability, green technologies, and the environment. The project is expected to comply with the **RIDE School Construction Regulations** and the **Northeast Collaborative for High Performance Schools (NE-CHPS)** protocol and is intended to provide a model for school construction across the state and the region.

**MET School's Commitment to Sustainability**

The MET School is committed to the three pillars of operating and educating in a green school:



- **Environmental Impact of Facilities- Net Zero**
- **Place-based Learning - School as a Teaching Tool**
- **Indoor Environmental Quality and Health of Students and Staff**

The MET School has an active '*Green Team*' - a highly motivated and empowered group of stakeholders - including principals, teachers, facility managers, students, nurses, and parents - that help create and sustain healthy, high performance learning environments for its students.

**Paul W. Crowley Metropolitan Regional Career and Technical Center**  
Newport, Rhode Island



“The greatest aspect of this school is the incredible indoor air quality.”

**Net Zero Facility:**

- Maximize natural day lighting through building orientation.
- 150kW Photovoltaic system
- Air tight building enclosure
- Super insulated shell
- “Cool roof”
- Innovative ventilation system
- Geo-thermal heat pump
- LED Lighting/ Day Lighting Control
- Water efficient fixtures
- Rainwater Harvesting

Taylor Rocc,  
Teacher, East Bay Met School



**School as a Teaching Tool:**

- Recycling Program
- Energy Tracking w/ EPA Portfolio Manager
- Drinking water sampling program
- School/Community Garden
- Green Team
- Indoor Environmental Management Plan
- Integrated Pest Management Plan

*This case study was prepared by NEEP with information provided by RIDE. To learn more about this project, please contact Manuel Cordero ([Manuel.Cordero@ride.ri.gov](mailto:Manuel.Cordero@ride.ri.gov)). For more information about NE-CHPS, contact Carolyn Sarno, NEEP Senior Program Manager, High Performance Buildings, at [csarno@neep.org](mailto:csarno@neep.org) or 781-860-9177 ext. 119.*

# Providence Career and Technical Academy



Education Built to Last  
Facilities Best Practices Tour 2013

Providence Career and Technical Academy  
41 Fricker Street  
Providence, RI 02903

Serving 650 students, Grades 9-12  
60% Free and Reduced Lunch Eligible

Built 2009 300,000 sq ft

School website: <http://www.edline.net/pages/PCTA>



## Facilities

- CHPS verified design
- EPA Energy Star building
- Tools for Schools participant
- 19% GHG emissions reduction
- 16% non-transportation energy use reduction
- 21% water consumption reduction
- 15 % of energy from on site PV and wind
- Nearly 100% walk, carpool or use public transit

## Health

- 120 minutes per week PE time
- Students walk to city site field trips
- Backpack program to supply weekend food to needy families
- 10 acres of local farmland supports district foodservice use

## Education

- Project-based learning model
- Kiosk energy dashboard and monitored in classes
- Student-built outdoor lab
- PD in environmental and sustainability education for all staff
- Green technologies and sustainable practices taught in all tech programs

## School Highlights

**Project-Based-Learning** incorporating Science, Technology, Engineering and Mathematics applications

**Science Labs** that utilize "School-as-a-Tool" resources

**Technology Rich** with Smart Boards and desktops in every classroom, 200 laptops in Library Media Center, electronic textbooks and eBooks available to all students

**Public Services** provided by students in Culinary, Pastry, Cosmetology, and Automotive. All programs recycle waste and use sustainable products.

**Sustainable Practices and Environmental Community Impacts** focus in after school and summer programs

"Promoting a healthy learning environment, educating students on sustainable practices and reducing environmental impacts on our community is what the Providence Career & Technical Academy is all about" ~Ramon D. Torres, Director of Career & Technical Programs

Read more about this school and other Green Ribbon Awardees at <http://www2.ed.gov/programs/green-ribbon-schools/awards.html>

Providence Career and Technical Academy (PCTA) has emerged as a leader in sustainable building techniques and environmental education. By integrating its many disciplines, PCTA prepares students for a sustainable future.

With the school's major reconstruction in 2009, the decision was made to overhaul all aspects of the school with a focus on sustainability. As a high school located in an urban setting, the career and technical education programs offers sustainability, environmental awareness, and energy efficiency education in our everyday classes which provides a unique opportunity to teach students how to shape their futures.

With a facilities manager trained specifically on high performance schools, the building gets the attention it needs to run as efficiently as it was designed to. PCTA has a large auditorium and field house which make the school ideal to hold special events and to showcase the school's environmental techniques and technologies to the community. In 2010, PCTA held a School as a Tool conference attended by State Senators, the EPA administrator and over 200 people. The building provided a great backdrop to discuss Project-Based Learning, Indoor Air Quality, and Operations and Maintenance, and for the Culinary Arts Program to serve a menu including local organic offerings.

View PCTA's project based learning video at <http://www.youtube.com/watch?v= 0MxmDk0P3A&safe=active>



# Appendix B: Exceptions Granted

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No exceptions were granted by the GBAC from January 2018-December 2020, nor were any requests for exemption from the Green Buildings Act Standards submitted to the Committee.

# Contact Information

## Green Buildings Advisory Committee

*Website:* [www.ribcc.ri.gov/gba/](http://www.ribcc.ri.gov/gba/)

*Mailing Address:*

RI GBAC

c/o Chairperson Trietch

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