

Rhode Island Green Buildings Advisory Committee 2021 Annual Report



Letter from the Chair and the Commissioner

April 19, 2022

To Governor Daniel J. McKee, Members of the General Assembly, and Director James E. Thorsen

On behalf of the Green Buildings Advisory Committee, we are proud to present the *Green Buildings Advisory Committee 2021 Annual Report*. This Report builds on the success of last year's first annual report by highlighting new public construction and large renovation projects that adhere to green building standards within the state and identifying additional opportunities to strengthen the Green Buildings Act.



The 2021 Act on Climate sets mandatory and enforceable greenhouse gas emissions reduction goals, including an interim goal of reducing emissions by 45% below 1990 levels by 2030 and eventually reaching net-zero emissions by 2050. The Administration and public entities have a role to lead by example in decarbonizing buildings, while ideally advancing other key objectives like reducing taxpayer costs and advancing non-energy benefits like the safety of our buildings and the health, comfort, and productivity of the people who use them. The Green Buildings Act is a tool for requiring green performance standards for major public works projects.

With the passing of the 2021 Act on Climate, the time is ripe for a strategic assessment of the Act. In February 2022, Director of Administration James Thorsen directed the Committee to conduct a study of the Green Buildings Act, to be delivered by the end of 2022. Specifically, the study will identify best practices for implementing green building standards in other states, assess awareness of the Green Buildings Act in Rhode Island, and recommend ways in which we may refine the Green Buildings Act, including but not limited to clarifying application of the Act, optimizing green performance standards, and quantifying the relative costs and benefits – and who incurs these costs and benefits – of such changes.

This 2021 Annual Report serves as a foundation for the Committee's upcoming study of the Green Buildings Act. Our intent is to align the Act with the 2021 Act on Climate, optimize co-benefits of green building standards, and implement processes that improve compliance and reporting. Thank you for your ongoing support of green buildings standards within the state and we look forward to strengthening our built environment with your leadership.

Sincerely,

A handwritten signature in black ink, appearing to read 'Carrie A. Gill'.

Carrie A. Gill, Ph.D.
Chair, Green Buildings Advisory Committee
Chief Economic & Policy Analyst, Rhode Island
Office of Energy Resources

A handwritten signature in black ink, appearing to read 'James Cambio'.

James Cambio
Commissioner, Rhode Island Building Code
Commission

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Section 1 – Overview

About the Rhode Island 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 a Leadership in Energy and Environmental Design (LEED) Certified or an equivalent high-performance green building standard. LEED is the most widely used green building rating system in the world and it provides a framework for healthy, highly efficient, and cost-saving green buildings.

2021 Act on Climate

The 2021 Act on Climate (RIGL §42-6.2) sets mandatory, enforceable climate emissions reduction goals leading the state to achieve net-zero emissions economy-wide by 2050. This legislation updates the previous 2014 Resilient Rhode Island Act, positioning the state to boldly address climate change and prepare for a global economy that will be shifting to adapt to clean technology. Decarbonizing our buildings will be a key initiative for achieving the legislative requirements of the 2021 Act on Climate and the Green Buildings Act will be essential for ensuring that public buildings throughout the state lead-by-example in achieving their decarbonization goals.



About the Green Buildings Advisory Committee

The Rhode Island Green Buildings Advisory Committee (GBAC) was formed in 2010 to help implement the Green Buildings Act. The Committee, which consists of volunteers appointed by the Director of the Department of Administration (DOA), works with the Rhode Island Building Code Commission and DOA to help ensure compliance with the Green Buildings Act and to provide education on green building practices for Rhode Islanders.

Responsibilities of the Green Buildings Advisory Committee

1. Make 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. Provide 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. Provide advice and counsel to the Building Code Commissioner and Department of Administration when determining equivalencies between standards

Current Committee Members

Carrie A. Gill, Ph.D. (Chair)

Chief Economic and Policy Analyst
Rhode Island Office of Energy Resources

James Cambio

Commissioner
Rhode Island Building Code Commission

Stephen Turner

President
Stephen Turner Inc.
Representing the Building Commissioning Industry

Christopher Armstrong

Director of Building Envelope Science
PACE Representatives, Inc.
Representing the Building Design Industry

Dr. Joseph da Silva

School Construction Coordinator
Rhode Island Department of Elementary & Secondary Education

Mark Winslow

Environmental Solutions Executive
Gilbane Building Company
Representing the Construction Industry

Melissa Travis

Board of Directors
Rhode Island Manufacturers Association
Representing the Building Materials Industry
Appointed to Committee 03/29/2022

David Patten

Director
Rhode Island Division of Capital Asset Management and Maintenance
Appointed to Committee 04/12/2022

Former Committee Members

We thank former members of the Committee for their service. Their valuable insights and support have strengthened the Committee for years and we are grateful for the time that they have dedicated to this effort.

Dr. Becca Trietch (Former Chair)

*Rhode Island Office of Energy Resources
Resigned 08/20/2021*

Kevin Rose

*Represented Energy Programs
Resigned 09/17/2021*

Ann Battersby

*Rhode Island Department of Environmental
Management
Resigned 02/01/2022*

Stephen Hughes

*Represented the Building Materials Industry
Resigned 11/16/2021*

Exceptions Granted in 2021

No exceptions were granted by the Committee in 2021, nor were any requests for exemption from the Green Buildings Act standards submitted to the Committee.

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. In 2022, the GBAC will be completing a study to help strengthen the Green Buildings Act and the Green Buildings Advisory Committee. By completing a thorough study, the Green Buildings Advisory Committee will have data to support new policies in the future. This study will evaluate both new and previous policy recommendations including, but not limited to the following topics:

- Identify best practices for implementing green building standards in the public sector in other states.
- Assess awareness of the Green Buildings Act in Rhode Island.
- Estimate the costs and benefits of the Act, including but not limited to upfront costs, operational savings, environmental impacts, economic development impacts, job impacts, and occupant impacts, as well as who incurs these costs and benefits.
- Recommend ways in which we may amend the Green Buildings Act and/or our procedure for applying the Act, including but not limited to aligning the Act with the 2021 Act on Climate, clarifying application of the Act, and implementing green performance standards.

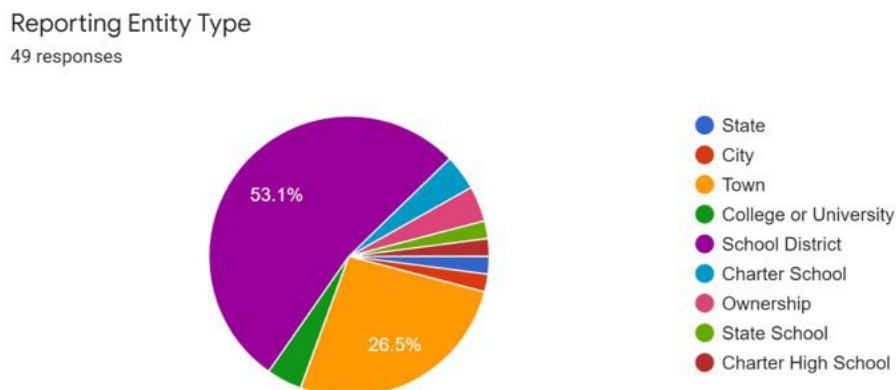


Section 2 – Compliance

Summary of Data Collection

Data on compliance with the Green Buildings Act in 2021 was collected through an online survey in February-March 2022. This survey was shared with 120 public entities throughout the state of Rhode Island, including local educational authorities, municipalities, colleges, universities, and State facilities. The Green Buildings Advisory Committee received 49 responses to the survey, for a response rate of approximately 40 percent. The survey was voluntary, and all data and information submitted was self-reported. A breakdown of survey respondents is provided below in Figure 1, with reporting entity categories also being self-reported.

Figure 1. Green Buildings Annual Report Survey Responses



It is important to note that the response rate is not large enough to expect the data results to be statistically significant or representative of all public entities and facilities across the state. Additionally, because the survey responses were voluntarily self-reported, we expect that the results may be biased as those that completed the survey may be more engaged and interested in the Green Buildings Act than those that did not respond. Many public entities have not historically inventoried their facilities, so this data may also underrepresent the number of facilities and their square footage.

With these caveats in mind, the data should be interpreted carefully and not seen as representative of all public facilities covered by the Green Buildings Act. The data is most useful for demonstrating the current knowledge and understanding of the Green Buildings Act by the entities and jurisdictions that it covers. The Green Buildings Act also only pertains to new construction projects or renovation projects, but through this survey process, the GBAC was able to gather statistics about the number and size of existing buildings and facilities for each entity or jurisdiction that responded. Nearly half of all survey

respondents track energy usage across buildings throughout their entities or jurisdictions, as can be seen in Figure 2. Meanwhile, Figure 3 shows that only slightly more than a quarter of respondents stated that they have an energy management plan or climate strategy for their jurisdictions.

Figure 2. Jurisdictional and Entity Energy Tracking

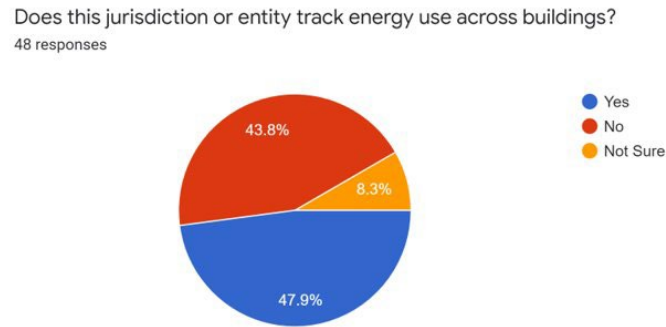
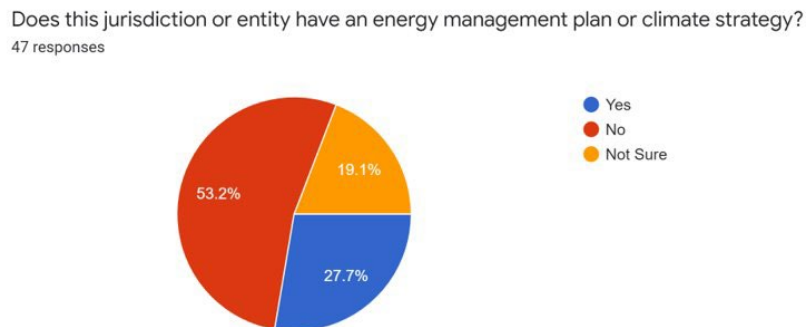


Figure 3. Energy and Climate Plans



Rhode Island Public Schools Compliance

Rhode Island public schools must be built to a green school standard – the 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. The following data is limited to survey respondents and is not a comprehensive summary of total K-12 buildings and facilities.

Public K-12 School Data

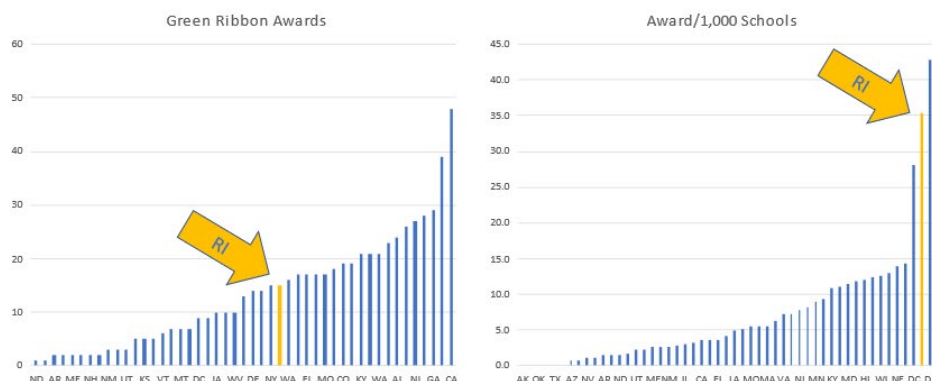
	Survey Responses
Total Number of Existing Buildings and Facilities	169
Square Footage of Existing Buildings and Facilities	11,280,903
2021 New Construction	8
2021 Renovations	4
Number of Respondents that Track Energy Use	19
Number of Respondents that have an Energy Management Plan or Climate Strategy	10

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 Building Authority draws from a list of Rhode Island schools that have complied with the Green Buildings Act for their annual award nominations. Since 2012, 15 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. A comparison of Green Ribbon Schools can be seen in the charts below, which helps show the success that Rhode Island has had with green construction with school buildings.

Figure 4. Rhode Island has Second-Highest Rate of Green Ribbon Awards by State



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.





2021 Achievements

In 2021, two Rhode Island schools were selected as awardees of the Green Ribbon Schools designation. Barrington Middle School and Portsmouth School district achieved this distinction for their efforts to save energy, reduce costs, feature environmentally sustainable learning spaces, protect health, foster wellness, and offer environmental education to boost academic achievement and community engagement.

In addition, the Rhode Island School Building Authority's leadership received the 2021 U.S. Department of Education Green Ribbon Schools Director's Award for their exemplary efforts to administer the Green Ribbon Schools program in the state of Rhode Island.



Exemplars: Lincoln High & Garden City Elementary

Lincoln High School (photo above) was completed in August 2021. This project included 68,000 square feet of new construction and 101,000 square feet of renovations, all in compliance with NE-CHPS standards. The school includes new and more efficient HVAC and plumbing. All interior and exterior lighting is now energy-efficient LED and energy is monitored by an energy management system.

Garden City Elementary School in Cranston is in the process of being rebuilt to serve grades K-5 (design below). Once completed, this 89,000 square foot elementary school will include high-efficiency mechanical systems, a high-performance building envelope, a high-efficiency ventilation system, a building management system to track energy use, and will be solar-ready. In total, the site is expected to be 53% more efficient than the current Rhode Island building energy code and is compliant with NE-CHPS standards.

These building features reduce energy use – and therefore reduce energy and operational costs – for their school districts. Furthermore, these projects create a learning environment that is healthier, more comfortable, and safer for students, teachers, and faculty.



Public College and University Compliance

All three public colleges and universities surveyed responded to the Green Buildings Advisory Committee Survey.

Public College and University Data

	Survey Responses
Total Number of Existing Buildings and Facilities	378
Square Footage of Existing Buildings and Facilities	8,154,351
Number of Existing LEED Certified or Equivalent Buildings	20
2021 New Construction	1
2021 Renovations	14
Number of Respondents that Track Energy Use	3
Number of Respondents that have an Energy Management Plan or Climate Strategy	2



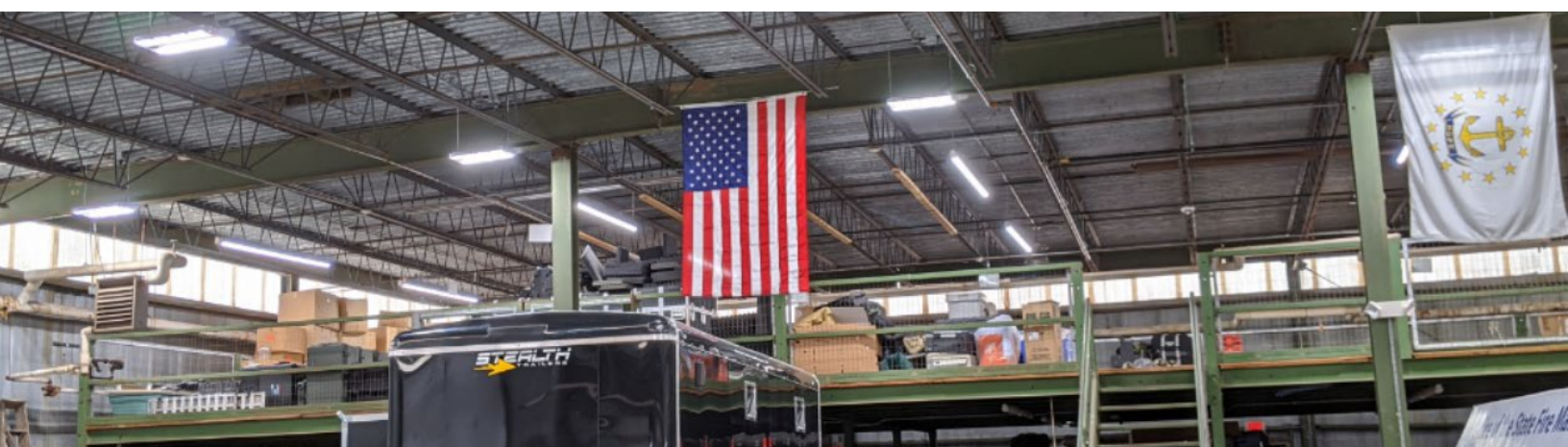
State Government

The State of Rhode Island's Administration owns and rents over a thousand facilities across Rhode Island. All properties are managed by the Division of Capital Assets Management and Maintenance (DCAMM), an office within the Department of Administration. DCAMM is in the very preliminary stages of one new construction project for the Rhode Island State Police. Their Southern Barracks will be a 35,000 square foot facility located in the Town of West Greenwich. While design has not yet begun, DCAMM anticipates this facility to be LEED certified or equivalent.

There are three major renovation projects. Regan Hospital at the Pastore Complex in Cranston is undergoing a 70,000 square foot renovation. This renovation will comply with the Green Buildings Act through meeting LEED equivalent standards. There are also planned interior renovations to the Medical Examiner's Office; these renovations are in the design phase and will meet LEED standards. Finally, while the Rhode Island State Police Portsmouth Barracks renovation is smaller than the qualification criteria from the Act, DCAMM also expects this in-design project to comply with the Green Buildings Act when complete.

Several other properties have undergone building improvements in 2021-2022, but those projects have only comprised upgrades to individual systems and not full renovations. The Division of Motor Vehicles in Cranston and the Rhode Island State Police Safety Complex in Scituate are both getting new roofs. These roofs are designed to be white in color so that they reflect the hot summer sun and result in lower burden on the building's internal cooling systems. Existing windows are also planned to be replaced with energy efficient windows in the Powers Building in Providence and thought the Center General buildings in Cranston.

These projects – even those too small to trigger compliance with the Green Buildings Act – demonstrate Rhode Island leading by example. Executive Order 15-17 set forth a number of clean energy and climate goals for state agencies. Among other notable accomplishments, the Administration has reduced its energy consumption by 11.3%, now offsets 95% of its electricity consumption with renewable electricity, and brought on 20 facility managers with Building Operating Certification to efficiently operate state buildings. These investments will result in nearly \$100,000,000 in avoided electric and gas utility costs over the project lifetimes. We encourage readers to visit www.energy.ri.gov/policies-programs/lead-by-example to learn more and view detailed data about the specific projects completed.



Municipal Government Compliance

Local governments throughout Rhode Island are expected to, and have been, making a good faith effort to comply with the Green Buildings Act. It is the responsibility of municipal governments to ensure that all relevant projects are in compliance with the Green Buildings Act. The Green Buildings Advisory Committee received survey responses from 12 of the 39 total municipal governments. The following data is limited to survey respondents and is not a comprehensive summary of municipal buildings and facilities.

The Green Buildings Advisory Committee will continue to support municipal governments with education and resources about the Green Buildings Act and its compliance paths. The goal is to fully integrate the Green Buildings Act requirements into the design and construction processes of all 39 local governments throughout Rhode Island.

Municipal Data

	Survey Responses
Total Number of Existing Buildings and Facilities	185
Square Footage of Existing Buildings and Facilities	2,333,556
Number of Existing LEED Certified or Equivalent Buildings	1
2021 New Construction	0
2021 Renovations	0
Number of Respondents that Track Energy Use	1
Number of Respondents that have an Energy Management Plan or Climate Strategy	1

Section 3 – Recommendations

Data Sources and Constraints

The data in this report was provided by public entities throughout the state through an online survey. The Committee received 49 responses to the survey out of approximately 120 inquiries, for an overall response rate of 40 percent. Higher education institutions had a 100 percent survey response rate, K-12 schools had an approximate response rate of 46 percent, and municipalities had a response rate of approximately 31 percent.

Given the low response rate, data should be interpreted as suggestive – rather than conclusive – of trends in compliance. Self-selection bias may also be present in the data's insights – entities already familiar with the Green Buildings Act and who already track building data may have been more likely to respond. Therefore, this data may show a relatively higher proportion of compliant buildings than is actually present in Rhode Island's public building stock.

The Committee will work to improve the data collection and tracking of green building construction and renovations. Through the study planned for 2022, the Committee will identify best practices from other states for future adoption in Rhode Island. The goal is to establish a system or process that allows the Committee to view progress on and compliance of all major public agency new construction projects and renovations within each calendar year.

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. Select educational presentations are posted on this webpage: <http://www.ribcc.ri.gov/gba/>.

Supporting Building Code Advancement

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.

Acknowledgments

The Committee acknowledges and thanks current Director of Administration James E. Thorsen for his leadership and guidance. The Committee also acknowledges and thanks former Director of Administration Michael DiBiase for his support. The Green Buildings Advisory Committee thanks Rhode Island's public officials for responding to the Committee's reporting requests. The Committee would also like to thank the Rhode Island Office of Energy Resources and the Rhode Island Building Code Commission for their leadership and administrative support. Finally, the Committee expresses its sincere appreciation to members of the public and stakeholders for their interest and participation in meetings.

Contact Information

Green Buildings Advisory Committee

Website: www.ribcc.ri.gov/gba/

Email: DOA.RIGBAC@doa.ri.gov

Mailing Address:

Rhode Island Green Building Advisory Committee

c/o Chairperson Carrie A. Gill, Ph.D.

Rhode Island Office of Energy Resources, 4th Floor

One Capitol Hill Providence, RI 02908

Appendix: Survey Instrument

Required Reporting Template for the 2021 Annual Report on Compliance with the Green Buildings Act.

Please complete the following questions about your jurisdiction's buildings and facilities.

We recommend reviewing all of the questions on this form first, gathering the required information, and then completing the form.

Reporting is due February 21, 2022. Thank you for your time!

Please contact Dr. Carrie Gill, Chair of the Green Buildings Advisory Committee, with any questions:
Carrie.Gill@energy.ri.gov.

More information about the Green Buildings Act and Advisory Committee is available here:
www.ribcc.ri.gov/gba.

* Required

Entity and Contact Information

Please provide basic information to identify your jurisdiction or entity and who we may contact for any additional questions.

1. Reporting Entity Name *

2. Reporting Entity Type *

Mark only one oval.

State

City

Town

College or University

DRAFT

School District

Other:

3. Contact Name*
4. Contact Title *
5. Contact Email *
6. Contact Phone *

Buildings and Facilities

Please complete the following questions for your jurisdiction or entity as of 12/31/2021.

7. Number of buildings total (please include all buildings either owned or leased)*
8. Total square footage of buildings (please include all buildings either owned or leased)*
9. Number of buildings LEED certified or equivalent, or better (please include all buildings either owned or leased) *
10. Total square footage of buildings LEED certified or equivalent, or better (please include all buildings either owned or leased) *

2021 New Construction and Renovations

For the following questions, please consider all buildings owned or leased in Calendar Year 2021 (January 1 - December 31)

For 'Project Stage', please indicate one of the following three stages:

- Design
- Under construction
- Completed

For 'Compliance Path', please indicate one of the following paths:

- Current version of the USGBC's LEED green building rating system
- Current version of Green Building Institute's Green Globes rating system
- Current version of RI Collaborative for High Performance Schools RI CHPS rating system
- Current version of Rhode Island's Stretch Code (RI-amended IGCC)
- Alternative equivalent compliance path (please specify)
- An exception was sought and granted by the State Building Code Commissioner

11. Name, address, use, own/lease, project stage, and compliance path of all public building new construction over 5,000 gross square feet of occupied or conditioned space designed, under construction, or completed in calendar year 2021. Please use this space to list out all applicable projects with the details requested. If there are none, please respond with "N/A" *
12. Name, address, use, and compliance path of public building renovations over 10,000 gross square feet of occupied or conditioned space designed, under construction, or completed in calendar year 2021. Please use this space to list out all applicable projects with the details requested. If there are none, please respond with "N/A" *
13. If known, what are the estimated annual operating savings resulting from construction and remodeling projects in 2021 that comply with the Green Building Act?
14. Does this jurisdiction or entity track energy use across buildings?

Mark only one oval.

- Yes
- No
- Not Sure

15. If Yes, what platform do you use?

Mark only one oval.

- (=:) EPA Portfolio Manager
- (=:) Other: _____

16. Does this jurisdiction or entity have an energy management plan or climate strategy?

Mark only one oval.

(=:) Yes

(=:) No

(=:) Not Sure

17. Is there anything else you'd like to highlight? (e.g., achievements, challenges, etc.).

Thank you for responding to this data request. The Green Buildings Advisory Committee welcomes you to submit photos or case studies of buildings you'd like to highlight. Please email any photos or case studies to RIGreenBuildings@gmail.com.
