



Building Performance Roundtables

State Agencies

September 22, 2022



Who is the VAEEC?

The voice of energy efficiency in Virginia, the VAEEC is a broad coalition of over 100 members whose goal is to facilitate discussions and share resources to advance energy efficiency.

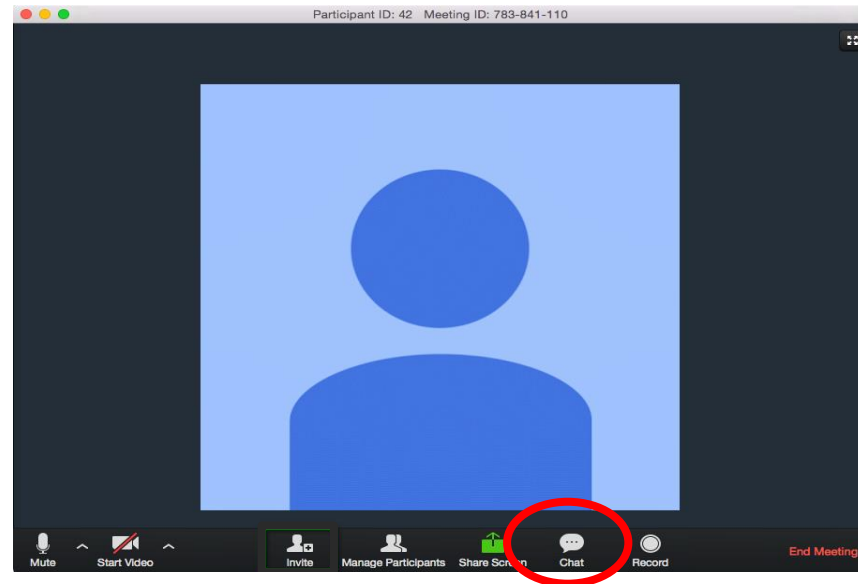
Our vision is for energy efficiency to be an integral part of Virginia's economy and clean energy future.

Learn more at VAEEC.org.



Audience Participation

Submit your questions or comments using the “Chat” button located at the bottom of your screen.



Building Performance Roundtable

Agenda

- Welcome & Introductions
- Audience Polls
- Legislation Overview
- The Three Pathways to Compliance
- Facilitated Discussion
- Next Steps

Welcome & Introductions

Presenters

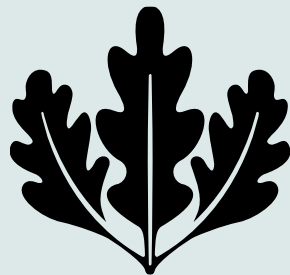
- Elizabeth Beardsley, *U.S. Green Building Council*
- Bryna Dunn, *Moseley Architects*

Key Partners

- Maggie Kelley-Riggins, *Southeast Energy Efficiency Alliance*
- Sandra Leibowitz, *Sustainable Design Consulting*

Welcome & Introductions

Respond to the poll questions when they appear on your screen



HB2001: High Performance Building Program for State Agencies

**Liz Beardsley
U.S. Green Building Council**





Safe
Healthy
Inclusive
Smart
Productive
Efficient
Equitable
Sustainable
Responsive
Resilient

Wiseburn Highschool | Segundo, California
LEED Silver
Photo credit: Ryan Gobuty, Gensler

A large orange triangle is positioned in the top-left corner of the slide, pointing towards the center.

Backstory

- 2012 Virginia High Performance Building Act
- Growth in adoption of green building practices
- Goal: to drive better, more efficient, resilient, and futureproof buildings

HB2001 Overview

1. State building program – added requirements
 - EV charging/EV-ready
 - Metering of all utilities
2. NEW Local building program = code section 15.2-1804.1

Green Glossary

In the Virginia statute:

“High Performance Building Certification Program”

- a public building **design, construction, and renovation** program that achieves certification using LEED, Green Globes, or VEES

“High Performance Standard,” “building standard,” “the standard”

- Meeting a High Performance Building Certification program PLUS several additional requirements

"VEES" means the Virginia Energy Conservation and Environmental Standards developed by DGS

In general usage:

Building (Energy) Performance Standards

- outcome-based policies and laws aimed at reducing the carbon impact of the built environment by requiring **existing buildings** to meet energy and/or GHG emissions-based performance targets (source: DOE)

24 § 2.2-1183. Building standards; exemption; report.

25 A. Any executive branch agency or institution entering the design phase for the construction of a
26 new building greater than 5,000 gross square feet in size, or the renovation of a building where the cost
27 of the renovation exceeds 50 percent of the value of the building, shall ~~conform to VEES and the~~
28 ~~building shall be designed,~~ *ensure that such building:*

29 1. *Is designed,* constructed, verified, and operated to comply with the high performance building
30 certification program *and VEES;*

31 2. *Has sufficient electric vehicle charging infrastructure. However, the provisions of this subdivision*
32 *shall not apply to buildings located in the right-of-way of the Interstate System as that term is defined in*
33 *§ 33.2-100; and*

34 3. *Has features that permit the agency or institution to track the building's energy efficiency and*
35 *associated carbon emissions, including metering of all electricity, gas, water, and other utilities.*

36 B. Any executive branch agency or institution may ~~exceed~~ the design and construction standards
37 required by subsection A, provided that such agency or institution obtains prior written approval from
38 the Director of the Department.

39 C. The Director of the Department may grant an exemption from the design and construction
40 standards required by subsection A upon a finding that special circumstances make the construction or
41 renovation to the standards impracticable. *Such exemption shall be made in writing and shall explain the*
42 *basis for granting such exemption. If the Director cites cost as a factor in granting an exemption, the*
43 *Director shall include a comparison of the cost the agency or institution will incur over the next 20*
44 *years if the agency does not comply with the standards required by subsection A versus the costs to the*
45 *agency or institution if the agency or institution were to comply with such standards.*

46 D. Each agency or institution shall submit an annual report to the Governor by January 1 of each
47 year detailing the energy-efficiency and associated carbon emissions metrics for each building built or
48 renovated in accordance with the design and construction standards required by subsection A and
49 completed during the prior fiscal year.

Standard

HB2001 State Agency High Performance Building Standard

1. Agency must ensure the project is designed, constructed, verified, and operated to comply with “comply with the high performance building certification program and VEES”
2. Sufficient EV infrastructure
3. Metering of all utilities

Applicability

- New buildings over 5,000 s.f.
- Renovations where the cost of the renovation exceeds 50% of the value of the building
- Trigger is beginning design phase
- Effective date July 1, 2021

Option to Exceed

Any state agency or institution may exceed the design and construction standards with prior written approval from the Director of DGS.

Exemption

- The Director of DGS may grant an exemption for a specific project.
- There must be a written finding that special circumstances make the construction or renovation to the standards impracticable.
- If cost is a factor in the exemption, it must include a comparison of the 20-year cost of the building if it complies with that if it does not.

“By building in this manner, the sustainable features of the buildings pay for themselves through their efficiencies **within 8 years.**”

— V. Lane Rawlins, University of North Texas

In contrast to what most people in the industry think, building Green doesn't necessarily need to cost more. The key to success is to make green an **integrated and natural part of the process** from the first day of planning and through the entire life of a building.

— Pierre Olofsson, CEO of Skanska Sweden

1. Green Building

- LEED Certification,
- Green Globes Certification, [and/or]
- the Virginia Energy Conservation and Environmental Standards (“VEES”) established by the Department of General Services, verified by an engineer or other professional

2. Electric Vehicle (EV) Charging

"Sufficient electric vehicle charging infrastructure" means provision or reservation of sufficient space to provide electric vehicle charging stations and related infrastructure, including transformers, service equipment, and large conduit, to support every centralized fleet vehicle that will be located at such building.

This does not apply to buildings located in the right-of-way of the Interstate System.

3. Metering

- Measure the building's energy consumption and associated carbon emissions, including metering of all electricity, gas, water, and other utilities

***NEW* Reporting Requirement**

- Annual report to Governor by January 1 detailing the energy-efficiency and associated carbon emissions metrics for each building built or renovated in accordance with the design and construction standards and completed during the prior fiscal year.

Related statute:

§ 2.2-604.2 Energy manager + Benchmarking

- List of facilities, energy usage, any audits or ESPCs
- Enter energy use into ENERGY STAR PORTFOLIO MANAGER (100% by 2025)
- Link accounts with VA DOE
- Ongoing list of priority facilities for audits or ESPCs





Virginia's High Performance Buildings Act: Three Pathways for State Agencies

Bryna Dunn, Associate AIA, AICP, GGP, LEED Fellow

September 22, 2022



The Legislation | Recap

BUILDINGS MUST:

- ▶ Be designed, constructed, verified, and operated to comply with a high-performance building certification program
- ▶ Comply with the Virginia Energy Conservation and Environmental Standards (VEES; Appendix V of the CPSM)
- ▶ Have sufficient ZEV charging and fueling infrastructure
- ▶ Include features that permit the measurement of energy consumption and associated carbon emissions

Mandatory Provisions of the VEES | (CPSM Appendix V)

§ 401.3.1	Electric Vehicle Parking Spaces/Charging Stations (comply with CPSM Appendix G)
§ 401.3.2.1	Identify basic building information for Energy Reporting in design documents; record in Form DGS-30-382
§ 401.3.2.2	Provide measurement devices to collect energy consumption data for each energy supply source to building
§ 401.3.2.3	Store energy data for 36 months and compute Source EUI, Site EUI, CO ₂ e, and CO ₂ e/ft ²
§ 401.3.2.4	Submit annual report to the Governor
§ 401.3.3	At completion of construction, submit Form DGS-30-381 and supporting documentation

Pick One of Three Compliance Pathways



mandatory

optional

prerequisite

optional

Pick One of Three Compliance Pathways

IgCC 2018

- ▶ Often called VEES; comply with all requirements in chapters 5-11
- ▶ Some requirements are amended by the VEES
- ▶ See Appendix V of the CPSM for amendments
- ▶ Written as code; compliance reviewed by DEB

LEED v4

- ▶ Comply with prerequisites + earn minimum 40 of 100 optional points
- ▶ Written as a voluntary green building certification program with supplementary reference material
- ▶ Provides user support
- ▶ Compliance reviewed for a fee by the GBCI

Green Globes

- ▶ Earn a minimum of 35% of the optional 1,000 points available
- ▶ Written as a voluntary green building certification program with supplementary reference material
- ▶ Provides user support
- ▶ Compliance reviewed for a fee by the GBI

Outcomes

IgCC 2018

PASS

/

FAIL

LEED v4

- ▶ CERTIFIED (40-49 points)
- ▶ SILVER (50-59 points)
- ▶ GOLD (60-79 points)
- ▶ PLATINUM (80-100 points)

Green Globes

- ▶ 1 Globe (35% -54% of applicable points)
- ▶ 2 Globes (55%-69% of applicable points)
- ▶ 3 Globes (70-84% of applicable points)
- ▶ 4 Globes (85%-100% of applicable points)

More about ZEV charging and fueling infrastructure

§ 2.2-1183.2

- ▶ Any executive branch agency or institution entering the design phase for the construction of a new building greater than 5,000 gross square feet in size, or the renovation of a building where the cost of the renovation exceeds 50% of the value of the building, shall ensure that such building has sufficient ZEV charging and fueling infrastructure.
- ▶ **TIP:** the HPBA defines this as the provision or reservation of sufficient space to provide EV charging stations and related infrastructure, including transformers, service equipment and large conduit, to support every centralized fleet vehicle that will be located at the building
- ▶ **TIP:** the VEES further requires compliance with CPSM Appendix G

Tips for Success

- ▶ Clarify project's high performance design priorities and goals in the RFP and in the Owner's Project Requirements documents
 - ▶ Include electric vehicle infrastructure and metering requirements
 - ▶ Consider also including renewable energy and resilience strategies
- ▶ Convene an integrative "high performance" strategy session as the project kicks off, and follow up regularly
- ▶ Confirm HPBA compliance pathway no later than the project's Schematic Design phase
- ▶ Stay the course! (switching compliance pathways mid-project can be costly and confusing)

Facilitated Discussion | Audience Q+A

Submit your questions or comments:

- 1) Through the chat-box, or
- 2) Unmute your line

Next Steps

Taking a proactive approach to:

- Update the existing law to better suit local governments, schools, and state agencies
- Use today's feedback as the foundation for a more innovative policy in the near future

Join us on October 31st and November 1st for the VAEEC 2022
[Energy Efficiency Forum!](#)

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