

VIRGINIA ENERGY EFFICIENCY COUNCIL

# 2023 Energy Efficiency Forum

October 4th & 5th





# Welcome

**Dear Energy Efficiency Friends and Supporters,**

On behalf of the VAEEC Board and Staff, we welcome you to the 2023 Energy Efficiency Forum. Our Staff has worked diligently for months to arrange this premiere event for all of us to enjoy.



It continues to be an exciting time for the energy efficiency sector in Virginia. Our members are beginning to reap the benefits of strong clean energy and climate state policies while anticipating new federal dollars on the horizon. Gathering together to collaborate on these new opportunities and to share in our collective accomplishments is what sets VAEEC members apart.

Thank you for attending today and for bringing your expertise to our event. You, our members, have the vision, the knowledge, and the experience to help us ensure that energy efficiency is an integral part of the clean energy future in Virginia. We succeed with your involvement.

Sincerely,

*John Morrill*

John Morrill  
*VAEEC Board Chair*  
*Fairfax County*

*Chelsea Harnish*

Chelsea Harnish  
*VAEEC Executive Director*

# Agenda: Day 1

OCTOBER 4TH; VIRTUAL

**1:00-1:10 PM** WELCOME & OPENING REMARKS

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**1:10-1:30 PM** KEYNOTE ADDRESS

**DR. BOB HOLSWORTH**

*MANAGING PARTNER, DECIDESMART*

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**1:35-2:45 PM** BREAKOUT SESSION 1

*TECHNOLOGY:  
WHAT'S NEW & WHAT'S NEXT?*

*IMPLEMENTING GREEN  
BUILDING POLICIES IN A  
DILLON RULE STATE*

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**2:45-3:00 PM** BREAK

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**3:05-4:15 PM** BREAKOUT SESSION 2

*RURAL ENERGY EFFICIENCY:  
NO TOWN LEFT BEHIND*

*CASE STUDY SESSION: GREEN  
BUILDING CERTIFICATIONS*

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**4:15 PM** CLOSING REMARKS, DAY-TWO OVERVIEW

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**5:00-6:30 PM** REGIONAL HAPPY HOURS  
Optional, post-event networking opportunity



# Agenda: Day 2

OCTOBER 5TH; RICHMOND, VA

12:00-1:00 PM

REGISTRATION

1:00-1:10 PM

WELCOME & UPDATES

1:10-1:35 PM

KEYNOTE ADDRESS

**DR. KARMA SAWYER**

*DIRECTOR OF THE ELECTRICITY INFRASTRUCTURE & BUILDINGS DIVISION,  
PACIFIC NORTHWEST NATIONAL LABORATORY*

1:35-2:10 PM

NETWORKING BREAK

2:15-3:30 PM

THE ENERGY EFFICIENCY WORKFORCE INITIATIVE:  
A HOLISTIC PATH TO WORKFORCE DEVELOPMENT

3:40-4:25 PM

VIRGINIA ENERGY EFFICIENCY  
LEADERSHIP AWARDS CEREMONY

4:25-4:30 PM

CLOSING REMARKS

4:30-6:00 PM

NETWORKING HAPPY HOUR  
Hors D'oeuvres and Drinks Provided





# Sessions

OCTOBER 4TH, 1:35 - 2:45 PM (CONCURRENT SESSIONS)

## **Technology: What's New & What's Next?**

Heat pumps, data centers, AI - oh my! Energy efficiency technologies are all over the news right now and are central to ongoing federal, state, and utility plans. However, as with all emerging tech, misinformation abounds. This session will sift facts from fiction to help suss out what the on-the-ground realities are, and what we can look forward to in the future.

*Speakers: Richard Anderson (Siemens), Andrew Grigsby (Viridiant), Millie Knowlton (CPower), Adam Sledd (Dominion Energy Innovation Center, MODERATOR)*

## **Implementing Green Building Policies in a Dillon Rule State**

As a Dillon Rule state, Virginia localities are limited to what they can and cannot mandate. However, jurisdictions are finding creative ways to make progress happen. Join speakers from Arlington County and the City of Alexandria as they discuss their green building policies and programs, and how these have established minimum standards for new development and major renovations. This will be an interactive session where audience members are encouraged to engage with speakers to learn how to implement their own green building policies.

*Speakers: Valerie Amor and Robert Kerns (City of Alexandria); Rich Dooley, Demetra McBride, Paul Roman, and Bill Eger (MODERATOR) (Arlington County)*

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OCTOBER 4TH, 3:05 - 4:15 PM (CONCURRENT SESSIONS)

## **Rural Energy Efficiency: No Town Left Behind**

According to the Department of Housing and Urban Development, 88% of Virginia is considered rural. However, this population is often overlooked in energy efficiency policy and programs. Hear from experts on how to reach rural communities and what opportunities are available to them.

*Speakers: Adia Holland (U.S. Dept. of Agriculture), Lance Hostutler (Optimum Building Solutions), Will Payne (Energy DELTA Southwest Virginia), Leigh Anne Ratliff (Trane, MODERATOR)*

# Sessions

OCTOBER 4TH, 3:05 - 4:15 PM (CONCURRENT SESSIONS)

## Case Study Session: Green Building Certifications

Green buildings are environmentally responsible, resource-efficient, and create healthier, more comfortable spaces. Numerous certification systems exist to assess a building's sustainability and designate it as a green building. This case study session is designed for attendees to benefit from shared knowledge and experience through presentations and audience Q&A. The certifications featured will include EarthCraft, Net-Zero, and Pearl Certification for single-family homes, multifamily buildings, and whole communities.

*Speakers: Stephen Dareing (Viridiant), Jay Epstein (Healthy Communities), Casey Murphy (Pearl Certification), Bryna Dunn (Moseley Architects, MODERATOR)*

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OCTOBER 5TH, 2:15-3:30 PM (PLENARY SESSION)

## The Energy Efficiency Workforce Initiative: A Holistic Path to Workforce Development

For the last two years, the VAEEC has been developing the energy efficiency workforce initiative (EEWI) to address Virginia's growing workforce needs. Get updates from staff and our expert partners as we build out each piece of the puzzle - recruitment, training, placement, and sustainable retention.

*Speakers: Michael Flanagan (Quick AC Quote), Laura Hanson (Tidewater Community College), Phil Hull (CHP Energy Solutions), Crystal McDonald (D.C. Sustainable Energy Utility), Rebecca Hui (VAEEC, MODERATOR)*



## CHAMPION



### Community Housing Partners' Energy Solutions

division promotes healthier, safer, and more energy-efficient built environments by providing energy audits, inspections, energy performance upgrades, and building science education across the Southeast and Mid-Atlantic. CHP Weatherization helps low-income individuals and families reduce energy burdens by improving the energy efficiency and health of their homes. They also partner with electric and gas utilities across the state to administer efficiency programs that reduce energy burdens and increase comfort, health, and safety for their income-qualifying residential customers. The Research and Training Center extends the knowledge and skills of the Energy Solutions team to weatherization and energy efficiency professionals across the country.



Dominion Energy has energy efficiency programs that can help you explore ways to reduce your energy usage at home and work. The Dominion Energy Efficiency Products program has discounted over 5 million LED

bulbs, and in 2020 discounted over 19,000 appliances. The Home Energy Assessment program reached over 2,700 participants, and the low income weatherization programs reached over 3,200 homes. Dominion launched a variety of new programs this year to provide customers with more energy-saving opportunities.



TRC Companies is a leading national provider of advanced energy services. They deliver across-the-meter management through energy efficiency, demand

response, and distributed energy services. TRC partners with utilities, agencies, and businesses to make energy visions actionable, through solutions that surpass regulatory and operational goals while influencing the next energy frontier. TRC has over 50 years of experience delivering efficient and resilient energy systems, and they annually help their customers achieve over three billion kWh of energy savings.

# Sponsors

## SUPPORTER



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## HAPPY HOUR RECEPTION

We hope you stick around for our happy hour reception following the conclusion of the event on October 5th. This will be a time for **networking and connection** with fellow energy efficiency leaders, as well as a time to learn more about the projects and programs receiving our eighth annual **Virginia Energy Efficiency Leadership Awards**.

*Complimentary hors d'oeuvres and drinks will be provided thanks to the generosity of our reception sponsor, **Dominion Energy**. Two drink tickets can be found in the back of your name badge.*





# Speakers



**Valerie Amor**, Energy Manager, Office of Climate Action at [City of Alexandria](#): In her role, Valerie is responsible for advancing climate change responsive policies, programs, and educational opportunities for the City's built environment. She contributes to the development of ambitious city policies for public and private development, and ensures that public facilities, including the City's entire portfolio of buildings, meets the City's Green Building Policy.

Previously with the New York Department of Buildings, Valerie was a Project Advocate for the Major Projects Program, an Energy Code Compliance Reviewer and Plans Reviewer. Valerie focuses on equitable designs, climate justice, resiliency, and regenerative policies addressing climate change impacts on coastal urban cities through her professional work, published writings, educational programs, community engagement, and leadership positions.



**Richard Anderson**, Data Centers National Sales Manager, Northeast & Atlantic at [Siemens Smart Infrastructure](#): Richard has worked within the intersection of IT and business since 2007. With a background in web development, marketing, and business development, Richard leverages his technical and market expertise to deliver meaningful impact to organizations dependent upon technology.

In 2019, Richard joined the Data Center Center of Competence at Siemens. In his role, Richard works to optimize efficiency, transparency and reliability through seamless OT and IT integrations. Focused on both end-user and stakeholder alike, Richard aligns both people and technology for maximizing success. Prior to Siemens, Richard spent six years at Intertek, a Nationally Recognized Testing Laboratory.



**Stephen Dareing**, Business Development & Relationship Manager at [Viridiant](#): Stephen has extensive operations management and business development experience in both the construction and aviation industries. As a former Virginia Class A contractor, Stephen led a small partnership specializing in timber-frame construction and prior to that, led many single-family new construction and renovation projects. Stephen was the Director of Business Development, North

America for an airport surface management technology company based in Tel Aviv, Israel, and was a senior operations analyst for United Airlines. Stephen is a graduate of Texas A&M University and holds a master's degree in public policy from Georgetown University.

# Speakers



**Bryna Dunn**, Vice President, Director of Sustainability at [Moseley Architects](#): In her role with Moseley Architects, Bryna works with project teams from the early planning through building construction to ensure that the most energy efficient and environmentally responsible solutions are considered and implemented where feasible. She has over 100 LEED certified projects in her portfolio.

She is a member of the American Institute of Certified Planners, an Associate Member of the American Institute of Architects, and is a LEED Fellow. She served for 8 years as the Chair for the US Green Building Council's Sustainable Sites Technical Advisory Group and 6 years on the LEED Steering Committee, including serving as both vice chair and chair.

*Bryna serves as a member of the VAEEC Board of Directors.*



**Bill Eger**, Chief Climate Policy & Coordination Officer at [Arlington County](#): Bill serves as the Chief Climate Policy and Coordination Officer for Arlington County where he leads the Office of Climate Coordination and Policy to amplify, coordinate, and add capacity to the County's ongoing responses to the climate crisis. He previously served as the Energy Manager for the City of Alexandria, leading their multi-disciplinary Office of Energy Management team. Bill holds certifications as a Professional Engineer, a Climate Change Professional, a Certified Energy Manager, a Sustainability Excellence Associate, an Eco-District Accredited Professional, a LEED Accredited Professional, and a Certified Public Manager.

*Bill serves as a member of the VAEEC Board of Directors and Chairs the Policy Committee.*



**Jay Epstein**, Chairman at [Healthy Communities](#): Jay has spent the last 45 years building homes that are energy efficient with enhanced indoor air quality throughout the Hampton Roads and Richmond area. Over the last five years, Jay worked to develop a balanced approach to successfully integrate optimum value engineering to provide high levels of comfort, indoor air quality and low energy usage combined with onsite Solar PV electric generation. Jay has won the 2016, 2017, 2018, 2019, 2020, 2021, 2022, and 2023 U.S. Department of Energy's Housing Innovation Award in the fields of Custom, Production, and Multifamily.



# Speakers



**Michael Flanagan**, Executive Vice President at [Quick AC Quote](#): With over 25 years experience, Michael has been an HVAC installer, service technician, salesman, and service manager. He helped grow Michael & Son Services' HVAC division from the ground floor to \$10M, and was later recruited by Trane to coach HVAC businesses on best business practices and training for their staff. During this time he developed a large network of HVAC contacts throughout VA.

As Executive Vice President of Quick AC Quote, Michael oversees the direction, training, and growth of Quick AC Quote's multi-faceted operations. His company's primary focus is the replacement of inefficient heat pumps with new, high efficiency systems with an average volume of 100 system replacements per month. They also perform installation of permanent dehumidifiers, weatherization, and insulation services. Quick AC Quote is a SWAM certified business and employs a staff of 20.



**Andrew Grigsby**, Energy Services Director at [Viridiant](#): Andrew leads Viridiant's Community Energy Services Department, providing energy efficiency and renewable energy services and consulting directly to consumers and helping advance options for all Virginians to benefit from today's clean energy technologies. He has more than 30 years' experience as a practitioner, educator, and leader in the clean energy, green building, and community planning industries. Andrew holds the Building Performance Institute Building Analyst certification and Virginia's Residential Building Energy Analyst license. Andrew is very proud to have been a founding board member of the VAEEC.



**Dr. Laura Hanson**, Interim Vice President for Workforce Solutions at [Tidewater Community College](#): With over 17 years of experience in workforce training and higher education leadership, Laura provides strategic college-wide leadership for the Center for Workforce Solutions at Tidewater Community College. Prior to her appointment as Interim Vice President, Laura served as Associate Vice President of Business and Corporate Solutions at TCC where she

led the development of corporate partnerships and customized training programs. She has developed and implemented programs and services to address the needs of business and industry in Hampton Roads with a focus on leadership, management, maritime and skilled trades. During this time, Laura oversaw the renovation of the Skilled Trades Academy; secured over \$2 million in grants to support workforce training and was instrumental in supporting TCC's application for and receipt of the MARAD Center of Excellence for Domestic Maritime Workforce Training and Education (CoE) designation in 2021. Laura serves on numerous industry panels and committees, including the Virginia Ship Repair Foundation and the Coastal Virginia Offshore Wind (CVOW) Advisory Committee.

# Speakers



**Adia Holland**, Loan & Grant Analyst at [U.S. Department of Agriculture Rural Development](#): Adia serves as a Rural Business and Cooperatives Program Loan and Grant Analyst for USDA/Rural Development in the Public Private Partnership Branch. After a decade working as a Business Program Director and Energy Coordinator for the State of Tennessee, she carries a thorough understanding of delivering loan and grant programs that provide financial backing and technical assistance to stimulate business creation and growth.

Adia, as an analyst in the Public Private Partnership Branch, assists the RBCS program areas by partnering with public and private community-based organizations and financial institutions to provide financial assistance, business development, and technical assistance to rural stakeholders.



**Dr. Bob Holsworth**, Managing Partner at [DecideSmart](#): Bob is the team lead for higher education and civic engagement projects. Bob has occupied key positions in a number of major governmental initiatives. He was the Executive Director of the Governor's Commission on Efficiency and Effectiveness. He has been the Director of the Virginia Executive Institute and Co-Staff Director of the Commission on the Future of Virginia's Urban Areas, a gubernatorial

commission that examined how Virginia's urban areas could become flourishing parts of regional economies.

Bob serves on the Board of Visitors of Virginia Commonwealth University. He received his BA from Seton Hall University and his PhD from the University of North Carolina at Chapel Hill.



**Lance Hostutler**, Founder & CEO at [Optimum Building Solutions LLC](#): Lance is the CEO of Optimum Building Solutions and has nearly two decades of construction and energy efficiency experience. His extensive knowledge of construction and building science uniquely qualifies OBS LLC to assist private market builders not only to meet energy code compliance through diagnostic testing and advisement, but also understand the intent of the State Energy

Code, increasing buy-in with builders. Being heavily involved with the low-income Federal Weatherization, VA RGGI and Utility Efficiency programs affords Lance the privilege of assisting service providers, nonprofits and Community Action Agencies, maximizing their community impact throughout Virginia and Maryland.



**Rebecca Hui**, Member Services Manager at [Virginia Energy Efficiency Council](#): Rebecca joined VAEEC in October 2018, acting as the single point of contact for all membership activities. She also spearheads the organization's workforce development initiative and acts as the staff liaison on the technology committee. Rebecca holds a Bachelors of Art in English , which she applies daily to the organization's communications and social media.



# Speakers



**Phil Hull**, Training Center Director at [Community Housing Partners Energy Solutions](#): Phil is the Director of the CHP Energy Solutions (IREC Accredited) Research and Training Center. Phil joined CHP Energy Solutions in 2010, and holds a master's degree in building science from Appalachian State University. Phil started his career performing audits on residential and light commercial buildings in North Carolina. He has trained nationally and internationally. Phil is an EOW board member, BPI certified Energy Auditor and a Quality Control Inspector.



**Robert Kerns**, Planning & Zoning Division Chief at [City of Alexandria](#): Rob is a certified planner with 15+ years of experience working with communities. Comprehensive planning is a major focus of his career, emphasizing the latest growth management, community design, and circulation strategies. To ensure implementation of a community's planning goals, Rob has drafted a wide variety of zoning and development regulations, and worked cooperatively with development teams to achieve optimum community and private market results. His town revitalization and urban design experience, particularly transit-oriented design projects, have enhanced and diversified his planning practice.



**Millie Knowlton**, Director of Strategy & Business Development at [CPower](#): Millie is the director of strategy and business development at CPower Energy, the leading, national Distributed Energy Resource monetization and virtual power plant provider. In her role, Millie leads new product development and commercialization. Prior to CPower, she spent four years at Tesla working in commercial energy storage, grid services and project development. Millie has a master's degree in Environmental Change and Management from University of Oxford.



**Crystal McDonald**, Director, Account Management & Workforce Development at [DCSEU/VEIC](#): A member of the District of Columbia Sustainable Energy Utility (DCSEU) Senior Leadership Team, Crystal develops and implements strategy to deliver energy efficiency services to DC commercial and institutional entities and expand the clean energy workforce. She leads a team of account managers in providing energy efficiency and renewable energy opportunities to customers across market sectors. She also manages the DCSEU's Workforce Development and Train Green programs which support career pathways and continuing education for DC residents and contractors. Crystal has a strong background in providing technical assistance to states, municipalities, and school districts to advance energy efficiency via federal funding sources.

# Speakers



**Casey Murphy**, Senior Vice President of Business Incubation, Corporate Division at [Pearl Certification](#): In his role, Casey supports Pearl's Public-Private Partnerships Division, as well as growth into new market segments including construction and insurance. Prior to joining Pearl, Casey worked at ICF as a Senior Technical Manager, primarily supporting U.S. EPA's voluntary programs, such as ENERGY STAR Certified Homes and Indoor airPLUS. Casey began his career in construction as a small business owner and building scientist. He served for four years on BPI's Standards and Technical Committees and was also a Board Member of Efficiency First.



**Will Payne**, Managing Partner at [Coalfield Strategies](#) and Director at [InvestSWVA](#): Will is Managing Partner of Coalfield Strategies, an economic development matchmaker for companies seeking cost-effective and talent-rich business expansion opportunities in rural Virginia. Projects include InvestSWVA, a public-private economic diversification campaign for Southwest Virginia and Energy DELTA Lab, an energy testbed focused on leveraging previously-mined land as a proving ground for the commercialization and deployment of innovative energy technologies. Will also leads business development for the Southwest Virginia Energy Research and Development Authority. He previously worked with Virginia Energy and was Principal of Bull Moose Strategies.



**Leigh Anne Ratliff**, Solutions Account Manager at [Trane Technologies](#): Leigh Anne is part of the Trane Technologies complex solutions group, which allows her to use her engineering, finance, and energy background to define and finance critical energy solutions for public clients in Virginia. Prior to working at Trane, Leigh Anne administered The Virginia Department of Energy's Demand Response contract bringing millions of dollars to state participants. She holds a B.S. Engineering degree from the University of Illinois at Urbana-Champaign, a M.S. Financial Markets and Trading from the Illinois Institute of Technology and a M.E.R.L. Energy Regulation and Environmental Law from the Vermont Law School.

*Leigh Anne serves as the Vice Chair of the VAEEC Board of Directors.*



# Speakers



**Paul Roman**, Green Building Program Manager at [Arlington County](#): Paul is the Green Building Program Manager for Arlington County, and resides in the Office of Sustainability and Environmental Management under the Department of Environmental Services. Paul manages the County's Green Building Incentive Program by working with private developers to incorporate energy efficiency and green building best practices into new construction projects. Paul also works in supporting the sustainable development of new municipal buildings through the County's Facility Sustainability Policy.



**Dr. Karma Sawyer**, Director of the Electricity Infrastructure & Buildings (EI&B) Division at the [Pacific Northwest National Laboratory \(PNNL\)](#): Karma is responsible for shaping and managing a vision and strategy to assure that PNNL addresses the U.S. Department of Energy's (DOE) most important energy efficiency, clean energy, and electricity infrastructure challenges.

Prior to joining PNNL, Karma served as the Program Manager for Emerging Technologies at DOE's Building Technologies Office. In this role, she developed and executed multi-year Research & Development strategies across a range of building technologies. She also worked collaboratively to advance cross-cutting initiatives, such as the Grid-interactive Efficient Buildings, Advanced Building Construction, and Grid Modernization Initiatives. From 2010-2013, Karma served as an Assistant Program Director and Fellow at ARPA-E, focusing on carbon capture and thermal storage technologies.



**Adam Sledd**, Director at [Dominion Energy Innovation Center](#): Adam is a business and non-profit leader with almost two decades in commercial real estate, investment management, and energy program experience. He has served on the board of the USGBC National Capital Region and as an advisor to multiple technology startups. A Richmond native, Adam earned his Bachelors degree at Pitzer College in California and his MBA at American University in D.C.

# Energizing Efficiency Campaign

To showcase the incredible work being done across the Commonwealth and to inspire even more, the VAEEC launched our Energizing Efficiency Campaign in May 2023. The campaign **highlights programs and projects** big and small, from all sectors and regions, **to proudly demonstrate how energy efficiency helps Virginians save energy and money**. Learn more about the campaign and all participants on the [VAEEC website](#).

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## 2023 CAMPAIGN PARTICIPANTS

### *Academic*

- [Fairfax County Public Schools' Energy Management Program](#)
- [Henrico County's Highland Springs and Tucker High Schools](#)
- [Sustainability in Loudoun County Public Schools](#)
- [The University of Virginia Sustainability Green Buildings](#)

### *Commercial/Industrial/Multi-Use*

- [Metal Melt Modernization \(Bingham and Taylor\)](#)
- [The Center of Developing Entrepreneurs \(CODE\) Building \(2RW Consultants\)](#)
- [Two Self-Powered Buildings in Arlington, Virginia \(The Stella Group\)](#)

### *Government*

- [Arlington County's Decarbonization Tool for Existing County Facilities](#)
- [The City of Alexandria's Chinquapin Recreation Center Commissioning](#)
- [The City of Fairfax's Regional Library Energy Retrofit](#)
- [Fairfax County's South Run and Cub Run Recreation Centers](#)
- [Fairfax County's Streetlighting Project](#)

### *Residential*

- [An Energy Efficient Mobil Home through Appalachian Power Company's Take Charge Program \(ApCo, CHP Energy Solutions\)](#)
- [Appalachian Power Company's Home Energy Reports](#)
- [Danville Utilities Energy Efficiency Grant Program through ARPA](#)
- [Kindlewood Redevelopment Using ASNH Funds \(Piedmont Housing Alliance\)](#)
- [Transforming the Market for High-Performing Homes in Virginia \(Pearl Certification\)](#)
- [Typical Weatherization Deferral and Repair \(WDR\) Case Study in Chesterfield, Virginia \(Project:HOMES\)](#)



# 2023 Awards

## VIRGINIA ENERGY EFFICIENCY LEADERSHIP AWARDS

Over the last eight years, the VAEEC has honored dozens of individuals, organizations, and companies for their energy efficiency achievements. These awards showcase how energy efficiency leaders across the Commonwealth are *helping businesses, governments, homeowners, and schools save money on energy bills while reducing energy consumption - all while stimulating job growth and our economy.*



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## SELECTION PROCESS

The 2023 awards were made possible by members of our Education & Events Committee, who scored all of the nominations. The Committee is composed of VAEEC members who are energy experts from different sectors working across the Commonwealth.

Each nomination was scored using the same criteria. The main considerations were the impact/potential impact of the nominee's efforts on *reducing overall energy use* and on *improving the building for the occupants and/or the affected community.*

### Thank you, Education & Events Committee members!

Everett Brubaker, *CHP Energy Solutions*

Colleen Bucher, *Forbright Bank*

Dave Gelman, *VEIC*

Michael Hubbard, *Dominion Energy*

Justin Mackovyak, *ICF*

Leigh Anne Ratliff, *Trane*

Joel Sarmiento, *CMTA*

Tim Unruh, *NAESCO*

Carrie Webster, *Henrico County*

**Congratulations** to all of the 2023 VEEL Awards winners. Learn about winning projects from previous years in our video series, *Building the Future.*

# 2023 Awards

## ACADEMIC CATEGORY

### Fairfax County Public Schools Energy Management Program

*Presented to Fairfax County Public Schools*

Fairfax County Public Schools (FCPS) is the **largest public school system in Virginia** with 235 facilities totaling 28 million square feet. In 2014, FCPS initiated a system of practices to **create a culture of energy performance awareness**. This Energy Management Program used quantitative tools tracking energy use and cost savings to inform decision making practices based on energy conservation. Energy Education Specialists are the FCPS employees tasked with involving all members of the FCPS Energy Education Team to **ensure efficient and effective stewardship of public resources** (both economic and environmental) **by continually striving to reduce district energy use and cost without negatively impacting health and safety, the educational environment, or productivity**. The FCPS Energy Education Team includes all students, staff, parents, and other community members who make up the totality of individuals who utilize FCPS sites.

**The cultural shift to energy conservation has resulted in tangible outcomes**, including **conserving energy, thereby reducing cost, developing and maintaining effective monitoring, reporting, and management strategies for efficient energy usage, utilizing instrumentation to monitor indoor air quality, and, improved comfort and safety**.

The energy tracking software, EnergyCAP, allows FCPS to **benchmark and analyze** utility bills, providing an understanding of all necessary data points to manage energy consumption, reduce carbon footprint, and drive savings. The numbers show how deeply woven and progressive the energy conservation program is at FCPS.

**Energy consumption has systematically reduced during the period 2014 to 2022, from 314 million Kwh to 262 million Kwh, and from 7 million therms to 5 million therms**. This energy efficiency has resulted in a **cost avoidance of over \$74 million**. The Energy Reduction Impact is over 3,000,000,000 KBtu, and over 240,000 metric tons of CO<sub>2</sub>e. This is equivalent to over 6 million seedlings grown for 10 years.

One of the primary goals of FCPS Facilities Management is to do everything possible to reduce operating and other support costs to allow the School Board & Superintendent to devote resources to the primary mission - instruction. The Energy Management Program is a successful part of this overall strategy.



# 2023 Awards

## COMMERCIAL CATEGORY

### The Center of Developing Entrepreneurs (CODE) Building

*Presented to 2RW Consultants*

The Center of Developing Entrepreneurs (CODE) building project is a **seven-story commercial development** that addresses the rising need for flexible, environmentally responsible working environments to support entrepreneurial activity in Central Virginia. Driven by the growing demand for sustainable workplaces, this innovative project was **designed with a commitment to energy efficiency and the welfare of its occupants**. Design choices were informed by a careful integration of design process, energy modeling, and an ongoing assessment of the carbon emissions associated with the materials used for construction, **helping the team lower the carbon footprint of the project even before the building opened**.

The sustainable MEP/FP design not only **enhances energy efficiency** but also **increases fresh air exchange and natural ventilation**, resulting in a **healthier and more comfortable environment** for occupants.

Energy modeling **predicted a 46% energy utilization reduction compared to the ASHRAE 90.1-2010 baseline**. The building **ventilation system provides more than twice the standard flow of fresh air—but with an energy use 1/3 that of a typical office building**.

Essential to these savings were the mechanical, electrical, plumbing, and fire protection design strategies, incorporating high-efficiency HVAC systems, a heat recovery chiller system, rainwater harvesting, an advanced BAS with localized demand limiting, and high-efficiency LED lighting.



**The building's success in combining state-of-the-art design with sustainable principles serves as a showcase for what can be achieved with thoughtful planning and innovative technology.** By exceeding the standard energy efficiency benchmarks and providing tangible benefits to its occupants and community, **the CODE building is poised to inspire more energy efficiency work in the future.**

# 2023 Awards

## GOVERNMENT CATEGORY

### Energy Retrofits at Cub Run & South Run Recreation Centers

*Presented to The Office of Environmental & Energy Coordination, Fairfax County Government, and Washington Gas Business Energy Solutions*

The Fairfax County Park Authority aims to inspire a passion for parks, healthy lifestyles, and stewardship by providing a sustainable, dynamic, and inclusive park system to support a thriving community. Fairfax County's Recreation Centers are an essential part of this mission. These two locations are of differing size and age, but the pools, fitness rooms, indoor gathering spaces, and outdoor activity facilities are an invaluable resource to the residents of the county, making them prime candidates for energy efficiency improvements and cost savings.

In 2020, the County's **Office of Environmental & Energy Coordination (OEEC)** engaged energy service company **CMTA** to conduct **Technical Energy Audits** at multiple locations. These audits include an inspection of the building envelope and roof, as well as the air distribution, heating, cooling, and lighting equipment. As a result, multiple **energy conservation measures (ECMs) were identified and prioritized** by maximizing energy savings and cost effectiveness, while minimizing disruption to the centers' day-to-day operations.

The Fairfax County Park Authority and the OEEC also worked with the **Washington Gas Business Energy Solutions: Virginia Program** to apply for incentives to replace their old boilers. Washington Gas offers financial incentives to help customers in Virginia **offset the upfront cost** of purchasing and installing energy efficient gas equipment, such as boilers, water heaters, furnaces, programmable thermostats, and commercial kitchen equipment.

In the six months since the project's completion in November 2022, **Cub Run has realized over 50% savings** (8,000,000 kBtu reduction in energy consumption) and **South Run is at 45% savings** (3,295,000 kBtu reduction) compared to the same period in the previous year. Cub Run and South Run Rec Centers are **on track to exceed the guaranteed energy reductions** of 30% and 15% and achieve energy use intensities of 355.9 and 278.3 respectively.



These improvements **save not only energy and money but also ensure a comfortable environment** for Fairfax County residents in any activities they choose to take part in. Given the successes realized at these locations, similar projects have since started at other county Rec Centers.



# 2023 Awards

## RESIDENTIAL CATEGORY

### Danville Utilities Energy Efficiency Grant Program Through ARPA

*Presented to Danville Utilities*

Aging equipment and poor insulation have long been a cause of excessive energy consumption in homes in the Danville Utilities service area. The City of Danville assigned to Danville Utilities **one million dollars towards improving efficiency in homes that were high consumers of energy**. The goal was to **assist customers with getting new HVAC equipment and/or insulation** depending on the needs. By replacing these systems, greater energy efficiency would be achieved and would ultimately **help the customer save on utility bills**.

Danville Utilities reviewed the monthly consumption of residential accounts and put together a list of **customers that had high energy consumption** relative to the size of their house. Danville Redevelopment and Housing Authority (DRHA) sent applications to the identified customers and the Danville Department of Social Services further culled the list to **those who were in most need of assistance** by using demographics and scoring factors such as age of residents. DRHA then examined the age and condition of HVAC units as well as assessing the existing insulation to **determine what areas needed improvement and provided project management for each home**. Any costs associated with the improvements were paid to DRHA to be distributed to the contractors providing the services.

Currently, **a total of 56 home efficiency projects have been completed** by this program. Of these homes, **37 received both new HVAC equipment and insulation**. An additional **13 received insulation only, six had new HVAC installed, and one had an existing HVAC repaired**.

This has undoubtedly resulted in **improved comfort and safety** for these homeowners and their families who would have otherwise not had the means to make these improvements to their homes.



Of the 56 completed homes, Danville currently has one-year historical data for 10 of these homes. **The total realized energy savings from these ten homes is 83,023 kWh over the course of one year**. To put that into perspective, **that is enough energy to power seven average U.S. homes** for an entire year.

# 2023 Awards

## COMMITTEE'S CHOICE FOR EXCEPTIONAL LEADERSHIP

### Two Self-Powered Buildings in Arlington County

*Presented to The Stella Group, Ltd.*

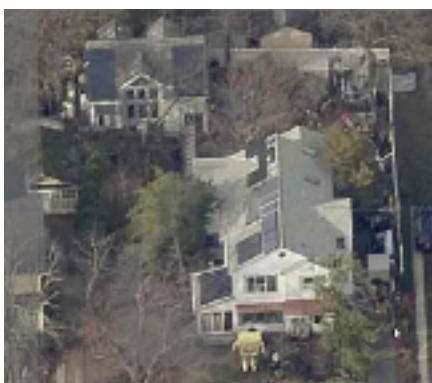
In 1985, Scott Sklar bought a Sears kit bungalow in Arlington County, VA. In 1995, he built a small two story office building on the same lot to house his company, The Stella Group, Ltd, which assists companies, local governments, infrastructure owners, and institutions on integrating high value energy efficiency, renewable energy, and energy storage.

From the start, Scott's goal for the buildings was to use commercially-available sustainable energy products, elegantly integrate them, and hold tours. He has been conducting tours every other week since 1990, and the property has been a part of the national American Solar Energy Society solar home tours for the last 25 years.

#### 1985 Single Family Home Retrofit

Energy conservation and generation measures for the residential building were installed between 1985 to 2020. These retrofits include double-pane/argon-filled windows, LO/MIT thermal barrier roof paint, R38 insulation, LED lighting, Energy-efficient appliances, solar water heating, direct exchange geothermal heat pump, and photovoltaics tied to a large battery system. During this time, Scott has seen a **total energy savings of \$36,000**, which breaks down to approximately \$2,7000 saved per year. The payback is estimated to be 12.3 years levelized.

#### New Construction Office Building



The office building was built in 1995 using R50 insulation, super-insulated windows, LED lighting, solar daylighting, small wind and hydrogen fuel cell, and solar roofing shingles tied to a web-enabled battery bank. In 2022, Scott bought an electric vehicle and expanded the solar PV to make the vehicle fully self-powered. He has seen a **total energy savings of \$32,000**, which breaks down to \$2,200 saved a year. The payback for this building is estimated to be 14 years.



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## Upcoming Dates

**JANUARY 10, 2024**

General Assembly  
Session Begins

**MAY 2024**

VAEEC Spring  
Forum





**VAEEC**