

VIRIDIANT 2019 ANNUAL REPORT

A foundation built on resiliency



Friends & Supporters

All of us at Viridiant work diligently to drive sustainability in the built environment using effective policies and strategies to affordably deliver sustainable, energy-efficient buildings. For 14 years we have been working to support the delivery of affordable, healthy housing and mitigating energy burdens to ensure a cleaner environment for future generations.

In order to navigate COVID-19, our team postponed and canceled events, modified safety standards to deliver site inspections and transitioned seamlessly to remote working. COVID-19 has shown us all that we are resilient. With stay-at-home orders largely in effect across the globe, human activities that adversely affect Earth's resilience have been halted and allowed our planet to rebound. The need for effective policy to reduce energy cost burdens and increase equity, and support to affordably deliver resilient, energy-efficient buildings, is greater than ever as so many people are experiencing heightened economic and health disparities and hardships. With the Virginia Clean Economy Act, increased focus on energy efficiency from Virginia utilities and support from state leadership and agencies, we are proud that Virginia is on a path toward carbon neutrality.

Viridiant will continue to support policies and implement programs to reduce energy cost burdens and support the delivery of healthy, affordable buildings necessary to protect people and the environment. We are pleased to announce our merger with Richmond Region Energy Alliance, thus expanding our ability to provide real opportunities to homeowners and renters alike to improve efficiency of existing buildings and explore solar investments.

On behalf of Viridiant's Board of Directors, staff and technical advisor network, we applaud our partners and their commitments to ensure a healthier, sustainable future for generations to come.

With thanks,







Bryan Mangas President

2019 BSCA Award Winners



Winners of the 2019 Building Sustainability Conference and Awards

Visionary Award
Sustainable Design Consulting, LLC

Project or Development - Single Family

Twisted Trees

Esmont, VA

Oesch Environmental Design, Wall Construction LLC, Affordable Energy Concepts, Inc.

Project or Development - Multifamily

Apartments at Kingsridge

Richmond, VA

Community Housing Partners

Project or Development - Commercial

319 Plume Street

Norfolk, VA

VIA Design Architects, Compo Construction Company

Builder or Developer

Metro Green

Arlington, VA

Habitat for Humanity Affiliate

Habitat for Humanity in the Roanoke Valley

Program, Initiative or Partnership

Arlington Initiative to Rethink Energy (AIRE)

Next Generation

Jennifer Kearney

University of Richmond

(Recognizing the next generation of sustainable advocates for their undergraduate or graduate work focusing on community sustainability, community resilience, energy/renewables or innovation: \$1,000 scholarship prize)



Top High-Performance Homes of the Year

Twisted Trees

Esmont, VA

Oesch Environmental Design, Wall Construction LLC, Affordable Energy Concepts, Inc.

Home on Fairfax Avenue

Roanoke, VA

Habitat for Humanity in the Roanoke Valley

Home on Fairland Road

Silver Spring, MD

Transitions Design-Build, LLC

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Newport News Redevelopment

& Housing Authority

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archi-TEC-tonic

Pam Kestner*

am Kestner

VA Department of Housing & Community Development

Mark Slack*

Kanawha Realty Advisors

Cindy Davis**

VA Department of Housing & Community Development

community Develo

Daniel Farrell**

VA Department of Mines,

Minerals, & Energy

Mark Waring**

Eagle Construction

Denotes new members in 202

* Denotes members that rolled off in 2019

** Denotes members

EarthCraft Multifamily Projects Certified in 2019		
PROJECT NAME	DEVELOPER	LOCATION
St. Paul's Apartments	S.L. Nusbaum Realty Co.	Norfolk
Valor West Apartments	S.L. Nusbaum Realty Co.	Fredericksburg
Washburn Place	T.M. Associates, Inc.	Marshall
Birchwood at Brambleton I	T.M. Associates, Inc.	Ashburn
Birchwood at Brambleton II	T.M. Associates, Inc.	Ashburn
October Station Apartments	The Lawson Companies	Suffolk
Timberland Park	GEM Management, LLC	Charlottesville
King William Place	Mark-Dana Corporation	Aylett
The Apartments at Kingsridge	Community Housing Partners	Richmond
Columbia Hills East	Arlington Partnership for Affordable Housing	Arlington
Columbia Hills West	Arlington Partnership for Affordable Housing	Arlington
Brennan Pointe II	The Woda Group, Inc.	Newport News
Cavalier Apartments II	Humanities Foundation	Petersburg
Old Forest Village	Rush Homes	Lynchburg
York County Senior Housing	Marlyn Development Corporation	Williamsburg
Shoulders Hill Senior Apartments (The Arbors)	Marlyn Development Corporation	Suffolk
Price Street Ph 1, 200 Standard I	The Franklin Johnston Group	Virginia Beach
Stone Springs Apartments	Flatiron Partners, LLC	Dulles
The Adams at Peppers Ferry	Denico Development	Christiansburg
Midlothian Towne Center	CMB Development	Midlothian
Citadel of Hope	Better Housing Coalition	Richmond
New Clay House II	Virginia Supportive Housing	Richmond
Marion Manor	Surber Development and Consulting LLC	Marion
Crewe Village Apartments	T.M. Associates, Inc.	Crewe
Dale Homes - Phase I	Portsmouth Redevelopment & Housing Authority	Portsmouth
Clarendon Court	McCormack Baron Salazar	Arlington
Lakewood Apartments	Flatiron Partners, LLC	Clarksville
Harmony Village	Flatiron Partners, LLC	Galax
Ivy Tower (The Towers)	Weston Associates Development Company Inc.	Newport News
Berkley Apartments	Fairstead Affordable LLC	Newport News

Single Family Building Partners in 2019-20

PARTNER NAME

Alliance RE Development, LLC	Hollyport Ventures, LLC
Associated Contracting Services, Inc.	J. Hall Homes, Inc.
Bench Mark Builders	JLJ Construction LLC
Blue Ridge Habitat for Humanity	Long Meadows, Inc.
Blue Ridge Home Builders Association	Luke Construction
Bremen Builders	MaxMark Homes, LLC
Commonwealth Properties	Mid-Atlantic Custom Builders
Community Housing Partners	Northfield Construction & Development
Cumberland Custom Homes	Peter Johnson Builders, LLC
Dominion Custom Homes	project:HOMES
Evergreen Homecrafters LLC	Pyramid Construction Group
Evergreene Homes, LLC	re:4m LLC
Farmville Area Habitat for Humanity, Inc.	Richmond Metropolitan Habitat for Humanity
Fauquier Habitat for Humanity	Ryan Homes
Green Mountain Construction, LLC	SAS Builders, Inc.
Green Valley Builders, Inc.	Shelter Alternatives, inc.
Habitat for Humanity in the Roanoke Valley	Southside Community Development & Housing Corporation
Habitat for Humanity of Culpeper County	Stony Point Design/Build, LLC
Habitat for Humanity of Greater Charlottesville	Sustainable Solutions of Virginia, Inc.
Habitat for Humanity of Northern Virginia	Theta Homes, LLC
Habitat for Humanity of the New River Valley	US2BG Contracting, LLC
Habitat for Humanity of Washington, D.C.	Wall Construction, LLC
Habitat for Humanity Peninsula and Greater Williamsburg	Wayne Harbin Builder, Inc.
Habitat for Humanity Virginia	

> Donate today!

Your donation helps Viridiant share our expert building science knowledge with the community and industry professionals on a range of topics from statewide energy codes to analyzing your water bill. Visit viridiant.org/donate.



Viridiant and RREA have always shared the same vision and worked towards complementary goals. Together, we can provide more advanced energy services to our community, help more households and businesses save money and accelerate a carbon-neutral future.

ANDREW GRIGSBY
ENERGY SERVICES DIRECTOR, VIRIDIANT

In April of 2020, Viridiant and the Richmond Region Energy Alliance (RREA) finalized a merger of the two organizations under the Viridiant name.

Karl Bren, Viridiant's 2006 co-founder, founded RREA in 2010. RREA's main work was to provide residents of the Richmond region with technical assistance, quality referrals, and discounts and rebates for energy efficiency improvements and solar power installations.

Andrew Grigsby, former RREA Executive Director, joined Viridiant in April to establish the new Community Energy Services division to offer energy audits, financial assistance, solar, consulting, technical expertise and education directly to homes, businesses and organizations in the region.

By expanding these services, Viridiant achieved significant gains toward specific Strategic Plan objectives by increasing our consumer education and engagement and providing more support to the existing housing market. The activities of the Community Energy Services division will boost our impact while growing our brand.

The idea to merge originated before the COVID-19 crisis as an effort to increase

organizational efficiency and effectiveness, but those goals became even more salient as the public health crisis brought massive disruption to the U.S. economy and beyond. Clean energy solutions are more important than ever as sheltering in place reminds us of the importance of resilient, efficient shelter.

The Virginia Clean Economy Act passed in this year's legislative session and has committed the Commonwealth to 100% clean energy by 2050. The merger with RREA provides Viridiant with a greater ability to help meet that goal through an increased focus on existing buildings — traditionally the most difficult market for clean energy applications. The expanded services will advance on-site solar, cutting-edge innovations in smart homes, as well as the ever-critical basics of air sealing, insulation, good HVAC design, etc. — all while increasing connections to our community and benefiting the environment.

> Donate today!

(e need your support to continue expand access to sustainable uildings throughout Virginia.



Demonstrating local solutions to global challenges

SUSTAINABILITY AT THE UNIVERSITY OF RICHMOND

The University of Richmond (UR) has a robust Sustainability Plan serving as a blueprint for how the campus community will achieve a long-term vision that supports and promotes a culture of sustainability. The Sustainability Plan contains stewardship strategies, encompassing topics from academics to green building to zero waste, that demonstrate local solutions to global challenges. Committed to achieving carbon neutrality, campus buildings and renewable energy play a large role in reaching this goal.

Among the University of Richmond's picturesque landscape and Collegiate Gothic architecture will stand the university's newest additions to its green certified buildings, the Well-Being Center and Queally Athletics Center. The university looked to Viridiant for the EarthCraft Light Commercial certification. The intensive level of support during the design and construction process focuses on site planning, energy and water efficiency, building durability and improved occupant health and productivity. The project will also perform building systems commissioning, an important step in ensuring system efficiency and promoting occupant thermal comfort.

The building will utilize daylighting design strategies, increasing occupant productivity

and well-being while reducing energy costs. Alternative transportation accommodations will be provided, including bike racks and electric vehicle charging stations to promote reduced carbon emissions from commuting.

Renewable energy certificates will be procured to match 100% of the building's electricity usage with solar energy, and, at completion, the building will also participate in off-site composting of organic materials, as well as provide receptacles for hard-to-recycle materials, encouraging occupants to reduce waste that ends up in landfills. The university plans to divert 75% of materials from landfills and reduce gross waste totals by 15% by 2025. 91% of UR's construction waste is recycled or reused.

The project will also participate in two years of post-occupancy performance benchmarking, which will illustrate reduced energy use and also allow the university to identify potential opportunities to further reduce energy consumption.

The University of Richmond's Sustainability Plan provides a strong foundation of sustainable operations and services and Viridiant is honored to have been chosen to facilitate the EarthCraft program at the Well-Being Center.

In pursuit of an EarthCraft Light Commercial certification, working with Viridiant has allowed for a much more collaborative process than what we have experienced with alternate building certifications in the past. Ultimately, this will result in a building that has sustainability woven deep into its fabric, both on a performance level, and from an experiential level for occupants.

BENJAMIN GILLIE
ASSISTANT DIRECTOR, CONSTRUCTION MANAGEMENT & DESIGN
UNIVERSITY OF RICHMOND



Working with Viridiant on our first EarthCraft Light Commercial project has been a great learning experience. Their team is hands-on throughout the process and any questions that arise are handled quickly and professionally.

ROB ANDREJEWSKI

DIRECTOR OF SUSTAINABILITY,
UNIVERSITY OF RICHMOND





45%

energy cost savings, on average, for residents in EarthCraft certified multifamily housing

In Virginia, the LIHTC program, administered by recently rebranded Virginia Housing, is the primary source for expanding and preserving the supply of affordable housing. According to the Economic and Programmatic Impacts of Virginia Housing study, "Between 2013 and 2018, Virginia Housing allocated tax credits for 281 projects, representing 24,000 lowincome units. During the 2013–2018 period, approximately \$190 million total LIHTCs were allocated by Virginia Housing. The construction and rehabilitation of affordable housing from LIHTCs creates significant economic activity through jobs, material purchases, and taxes over the 3-year LIHTC project schedule."

Approximately 44% of Virginians spend over 30% of their income on rent and utilities, which is considered housing cost burdened. Families are forced to make tough choices between housing and other basic needs, such as healthcare, education and food.

The LIHTC program is one of the most important resources for expanding and preserving affordable housing and Virginia Housing has utilized green building rating systems as an incentive in the LIHTC program to increase energy efficiency in the rental market and reduce the impact on Virginia's built environment. Virginia Housing's leadership and their positive impacts

on green building policies for the LIHTC program have been nationally recognized.

By incorporating energy- and resource-efficient designs and systems in Virginia, EarthCraft certified multifamily housing yields, on average, 45% annual energy cost savings over standard new construction, according to Sustaining Energy Efficiency: Longitudinal Evidence of Virginia's Low-Income Housing Tax Credit Properties by the Virginia Center for Housing Research at Virginia Tech (VCHR). Residents save more energy, which directly translates to lower monthly utility bills while reducing the impact on the environment.

For more information on Virginia Housing's study, visit bit.ly/virginiahousingimpactstudy. For more information on the VCHR study, visit: bit.ly/VCHRenergyefficiencystudy.

> Donate today!

Help us make quality housing more affordable for families across Virginia **Visit viridiant.org/donate.**

Families Served in 2019

EarthCraft 2,120 UNITS 64 HOMES EarthCraft House **New Construction** EarthCraft House EarthCraft 986 UNITS 6 HOMES with ENERGY STAR® Renovation EarthCraft 23 PROJECTS **ENERGY STAR®** 3 HOMES New Construction Certified EarthCraft **42** HOMES 8 PROJECTS HERS® only Renovation SINGLE FAMILY **MULTIFAMILY TOTAL HOMES IN 2019 TOTAL PROJECTS IN 2019** 5,143 THROUGH 12/31/19 THROUGH 12/31/19 THROUGH 12/31/19 27,884 3,221 **FAMILIES SERVED IN 2019** FAMILIES SERVED THROUGH 12/31/19

> Donate today!

Your donation helps someone breathe easier. Consistently, experts have linked building design and quality to occupant health and safety. Families living in energy-efficient, sustainable homes experience increased comfort, improved health and lower utility bills. Help us serve more families by making a donation today. Visit viridiant.org/donate.

Supporting Energy Code Implementation

A 2017-2018 field study in Virginia looked at how well measures of the residential energy code were being implemented by builders and enforced by code officials. Southeast Energy Efficiency Alliance (SEEA) led the initiative in Virginia and provided funding for Viridiant to perform a field study in 2017-2018 to assess the implementation of the residential energy code across Virginia in new construction single family buildings.

Following Viridiant's data collection and analysis by the Pacific Northwest National Laboratory (PNNL), the Baseline Report was released in October 2019 and targeted areas of improvement were identified for educational efforts. Viridiant's Technical Director and Director of Residential Operations led the charge in educating the industry across Virginia.

With a goal of reaching both those who implement energy code measures and those who enforce it, Viridiant developed content to address the how and why of the residential energy code in Virginia. Supported by

additional funding from SEEA, over nine months Viridiant deployed 32 hours of instruction across the Commonwealth to over 350 code officials, builders, architects and other building professionals. The training covered existing energy code measures that fell short in the field study, as well as how to meet new provisions of the 2015 energy code, which became mandatory in September 2019.

The training delivery was modified earlier this year in an effort to reduce the spread of COVID-19. In partnership with the Department of Housing and Community Development (DHCD), Viridiant was able to successfully move the remaining scheduled trainings to an online format and increase attendance numbers without geographic barriers.

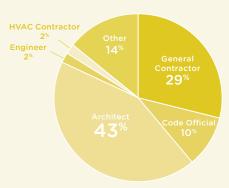
When DHCD mandated the training in December 2019, Viridiant worked quickly to develop and record the material for DHCD to produce into online training modules that can be accessed 24/7 through their learning portal.





of U.S. energy consumption is from buildings, representing a huge opportunity for reduction

HIGHLIGHTS



were general contractors.

Leading the Way with Green Building Policy

The City of Alexandria is leading the way with their commitment to sustainable development through green building certifications. Alexandria City Council adopted the 2019 Green Building Policy on June 22, 2019, and it is in effect for all development applications submitted on or after March 2, 2020.

The 2019 Green Building Policy states, "Green building is a practice that brings environmental and economic benefits to present and future generations. A green building ensures that sustainable standards are adhered to throughout the design and construction process to lessen the impacts of the building on the local and global environment, resulting in lower operational costs and a healthy indoor environment for building occupants."

The development standards require compliance with the Green Building Policy for new private development, new public development and major renovations that require a Development Site Plan or a Development Special Use Permit.

The policy identifies pathways to achieve the city's green building performance standards and includes only three nationally recognized green building rating systems. Viridiant-administered EarthCraft certification is one of the three pre-approved pathways for compliance. With the policy targeting reduced energy waste, increased water efficiency and improved indoor environmental quality, EarthCraft is the ideal, lower-cost program to meet the new standards.

In an effort to continually educate the community and development industry on the benefits and best ways to achieve green buildings, Viridiant is offering free webinars on how to meet Alexandria's Green Building Policy requirements.

Viridiant commends the City of Alexandria for its commitment to sustainable development and stricter policy standards that benefit both occupant health and the environment.

KC BLEILE
EXECUTIVE DIRECTOR, VIRIDIANT

Of Green building is a practice that brings environmental and economic benefits to present and future generations. CITY OF ALEXANDRIA 2019 GREEN BUILDING POLICY

2019 Energy Savings

In 2019, Viridiant verified 3,221 homes



NEW CONSTRUCTION AVERAGE HERS*

61

RENOVATION AVERAGE HER 113 (BEFORE)
64 (AFTER)



NEW CONSTRUCTION AVERAGE HERS*

53

HERS® INDEX



EQUATES TO ELIMINATION OF

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4,10/

TONS OF CARRON DIOXIDI

4,591,462

POUNDS OF COAL BURNED - .

158,303

NCANDESCENT LAMPS SWITCHED TO LEDS 1

68,902

TREE SEEDLINGS GROWN FOR 10 YEARS Ī

9,647

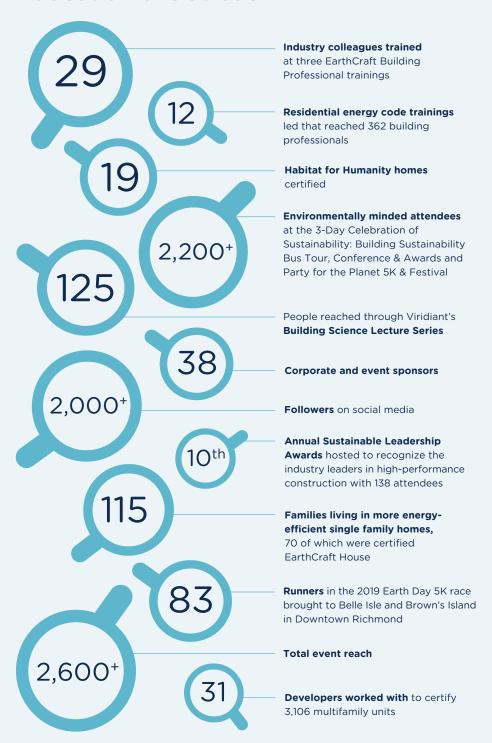
BARRELS OF OIL CONSUMED 4

900

PASSENGER VEHICLES DRIVEN FOR ONE YEAR HOMES'
ELECTRICITY
USE FOR
ONE YEAR

\$1,429,815

Education & Outreach



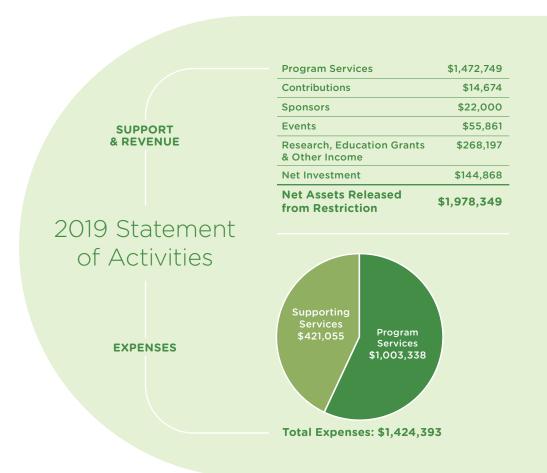
Using our voices

SERVED ON:

- Governor's Clean Energy Advisory Board
- Virginia Energy Efficiency Council Board of Directors
- Multifamily Energy Efficiency Council
- · Dominion Energy Efficiency Council
- Virginia Energy Workforce Consortium Communications Committee
- Reach Out Center Board
- City of Richmond Green City Commission
- Department of Mines, Minerals, and Energy's energyefficiency stakeholder steering group for Virginia Clean Economy Act (VCEA)

PRESENTED TO OR EXHIBITED AT:

- C-PACE Action Hampton Roads
- Virginia Clean Energy Summit
- VA Builders Summit and Expo
- VA Governor's Housing Conference
- RESNET Conference
- SEEA Conference on Energy Efficiency
- Architecture Exchange East



Redesigning Sustainability Celebrations

Each year Viridiant aims to recognize sustainability in our communities and leaders in high-performance construction delivery through our Three-Day Celebration of Sustainability in the spring. This year, the Building Sustainability Bus Tour, Conference & Awards and Party for the Planet festival scheduled for April 23-25 were impacted by the ongoing public health crisis.

Viridiant remains committed to delivering trainings and events while adapting to the new virtual norms of today. Building on the success of last year's inaugural Building Sustainability Conference & Awards, Viridiant is eager to redesign the event to meet our community where they are this fall.

The highly anticipated conference and awards are shifting to a virtual platform on September 2, 2020, with the 11th annual awards ceremony recognizing leaders in high-performance construction and a compelling keynote address on what it's like growing up in Richmond's public housing. Conference attendees will also hear from industry experts during two educational sessions. One panel will explore Virginia's energy goals with the new Clean Economy Act, energy code updates and utility rebate programs while the other panel details how to actually deliver high-performance buildings through design, construction and the integration of technology. Viridiant is also excited to offer complimentary registration for this year's conference and awards.

Going forward, Viridiant will continue to adapt and share our work and the impact it is having on our buildings, our community, our environment and future generations. We applaud our partners, who are committed to delivering the Commonwealth's most highperformance, healthy and resilient policies and occupied spaces.

Register to be a part of Viridiant's live, virtually connected experience at viridiant.org/events.







Donors and Sponsors

A sincere thank you to all of our supporters

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Jeffrey Sadler

GREEN GURU

Jenny Palmer

Rodes and Allison Boyd

Dona Huang

Leo Watkins

Mark and Martha Raper in honor of Stuart Nuckols

Karen Wilds

Allison Boadanovic

Charles and Dorothy Gerena

Jeffrey Sties

Lindsay Riesbeck

Shelton Cartwright

Trip Pollard

Linda Shankle

Manon Shankle

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Greening Urban

Habitat for Humanity Virginia

Hollyport Ventures

Home Builders Association

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Virginia Community Capital

Virginia Community

Development Corporation

Virginia Department of Mines, Minerals, and Energy

Virginia Energy Efficiency

Virginia Housing Alliance

Development Authority

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Your donation helps deliver the immediate benefits of Visit viridiant.org/donate.

Your Support Matters

Viridiant, a 501(c)(3) non-profit, prides itself on offering superior quality, affordable programs that can suit the needs of any builder or developer who shows a commitment to high-performance homebuilding. We strive to remove any financial barriers to green building by delivering our programs at a fraction of the cost of similar programs.

With your support, we can touch more buildings, making a significant impact not only on the region's energy use but also on the lives of the residents who will enjoy comfortable, healthy and affordable homes.



Donate today at viridiant.org/donate



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