I. Letter from our Interim Executive Director and Board Chair

2030 is 8 years away. As a society we have set some ambitious 2030, 2035, and 2050 goals. Are we ready to meet them? Even though 2021 was characterized by turbulence and setbacks, the Green Building United community’s steadfastness, commitment, adaptability, and generosity has helped us move forward toward meeting our goals and the vision of a sustainable, healthy and resilient built environment for all.

Our active membership contributed over 2,000 volunteer hours developing and hosting education programs, supporting legislative action, demonstrating and broadening knowledge through projects and publications, proving that pandemics can’t stop us. We owe a deep gratitude for everyone’s contributions.

We made progress on several initiatives that have set the framework for achieving in the future including: participating in building a strong HERE4CJ Coalition; expanding the boundaries and inventory of the 2030 District; providing over 360 hours of educational programming covering topics from Net Zero Embodied Carbon to transforming Philly to a Living Future Community; publishing the Passive Rowhouse Manual to guide renovations for decarbonization; and providing critical technical assistance to craft statewide housing legislation.

We look forward to seeing you all in 2022 but will approach each in-person events with care. We plan to continue to offer virtual only education and to complement in-person events with hybrid options to integrate the positives of virtual gathering and information sharing with the irreplaceable value of human connection.

Susan Lowry, Board Chair

Amy Cornelius, Interim Executive Director

II. 2021 Highlights

- Welcomed four new staff members and hired an Interim Executive Director and launched a broader search for an Executive Director.
- The Passive House Community published the Rowhouse Manual and completed the Habitat for Humanity Rowhouse Study.
- Added 27 million sf to the 2030 District including the entire school District of Philadelphia and a portfolio of Drexel buildings - a huge win for climate and for the health of students.
- Further Solidified the HERE4CJ coalition.
- Strengthened the partnership with the Carbon Leadership Forum.
- Contributed to the passing and codifying of the Delaware Solar Community Bill.
- Worked in coalition to contribute to the Delaware Climate Plan.
- Hosted over 36 virtual educational events with more than 1680 attendees including hosting (virtually) all three large, signature events.
- Advocated in support of the Philadelphia Gas Works (PGW) diversification.
- Testified to City Council in support of requiring LEED Gold certification for new construction or major renovations of municipal buildings; a Bill that passed into law.
- Translated the 2019 Building Energy Performance Policy (BEPP) regulations into program guidance for the Office of Sustainability for implementation in 2022.
- Provided technical support to PA State Senator Nikil Saval’s Healthy Homes and Repairs working group to provide critical input for legislation to repair, weatherize, and electrify housing, which will be introduced in early 2022.
III. How We Work

Green Building United is a small, dynamic nonprofit that focuses on scalable education, policy, and program solutions to improve the built environment and to build community for the health and wellbeing of all.

GBU is focused on a vision of attaining a Sustainable, Healthy, and Resilient Built Environment for all. Visualized here in our Interaction Map, we use the tools of Education, Demonstration, and Advocacy to mobilize our members to push the boundaries of what is possible. Our Communities and Committees support that vision by developing and implementing proven best practices through goal-oriented programs sharing lessons learned, and cost and performance data to make practices mainstream. And we use those tools and support to reach out into the broader community to make lasting change: formalizing best practices; pushing for policy changes at the city, municipal, and state level; working with community groups and schools to build collaborative partnerships; supporting implementation of projects, regulations, and legislation using the tools of: technical assistance, measurement, and communication with an emphasis on measuring impact, replicable efforts, and ensuring positive change.

IV. We Are Our Members

For more than 20 years, we have held true to Green Building United’s founding as a “member-based” organization. Our members help support our work by serving on committees, advocating for green building and sustainable environmental legislation, speaking at events, and donating. Part of GBU’s strength has always been personal connection through in-person events. This has remained important through the global pandemic. To stay engaged with our members we have:

- Revamped newsletters to be more frequent and content filled;
- Enhanced our virtual skills to host many types of events that include games, polling, small group discussion, graphic brainstorming, webinars, and even cocktail parties;
- Instituted a regular Community Coffee;
- And, through our GBU Communities, supported each other and continued volunteer activities where possible.

Our membership structure changed this year to a flat fee model with the ability to auto-renew and member benefits were updated. Members are entitled to: 24/7 access to the Webinars on Demand Library, gain complimentary admission to all small events, obtain discounted tickets to major events and to discounted membership at partner organizations, and have access to networking and volunteer opportunities. If cost is a barrier to membership, GBU has set in place an honor based “pay what you can” sliding scale system but we encourage anyone who can contribute at the full membership price to do so.

2021 illustrated that we are a community – one that is learning, growing, and doing what we can to make the built environment better for humanity and the environment. We are grateful to have such a dedicated group of members and volunteers who collectively donated over 2,000 hours of time to Green Building United.

**Metrics**
- Number of Members – 352
- Number of Volunteers - 198
- Hours volunteered – 2,000+
Our Members are involved

Committees

- **Executive:** Comprised of leadership from the Board of Directors, the Executive Committee coordinates the activities of and makes policy change recommendations to the Board.

- **Finance:** Comprised mainly of Board of Director members, the Finance Committee oversees the financial activities of the organization with the aim of ensuring it operates in a healthy and aboveboard manner.

- **Governance:** Comprised of leadership from the Board of Directors, the Governance Committee ensures that the organization operates according to its Charter and Bylaws.

- **Development:** Open to any member, the Development Committee works to connect the mission of the organization to funding sources.

- **Education & Events:** Open to any member, the Education & Events Committee brings together representatives of every Community to develop a compelling, coordinated annual calendar of educational and networking events.

- **Diversity Equity and Inclusion:** Open to any member, the Diversity Equity and Inclusion Committee works to elevate awareness and educate the entire community.

- **Policy & Advocacy:** Open to any member, the Policy & Advocacy Committee tracks pending and targets the need for new legislation to support the goals of the organization and works collaboratively with other organizations to support legislative action at the local and state level.

- **Groundbreaker Awards Host Committee:** By invitation, the Groundbreaker Awards Host Committee calls for and reviews nominations for projects and individuals, oversees voting, and announces the winners of the Groundbreaker annual award.

- **New Gravity Housing Conference Committee:** By invitation, the New Gravity Housing Conference Committee has an understanding of Passive House design and construction to help shape the event; calls for and reviews session proposals and selects the final offering of presentations; assists with advertising the event and encouraging registration and financial support of the event.

- **Sustainability Symposium Steering Committee:** By invitation, the Sustainability Symposium Steering Committee helps to develop event themes; calls for and reviews session proposals and selects the final offering of presentations to ensure a well-rounded slate of topics and educational levels; assists with advertising the event and encourages registration and financial support of the event.

Communities

- **Delaware Community** advocates for advancing a sustainable, resilient, and healthy built environment that will transform the standards in The First State.

- **Lehigh Valley Community** is focused on promoting and advancing the sustainable transformation of the regional built environment through education and advocacy.

- **Living Future Community** is united by a common passion for regenerative building practices that look at buildings holistically, addressing not only energy, water, materials, and waste systems but the quality of life through biophilic considerations.

- **Passive House Community** is dedicated to making Passive House design and construction mainstream.

- **Carbon Leadership Forum** (trial period) is focused on embodied carbon in the built environment. CLF is exploring formally joining GBU as a Community.

V. Advancing Sustainability Through Our Members

**Green Building United** took education to a new creative level as the world adapted to an online existence by hosting over 30 virtual events on topics ranging from community solar to resilient housing. Our three signature events were scaled back and delivered completely virtual as the pandemic took a firm grasp but the speakers, projects, and leadership recognition was more dynamic and poignant than ever before. The **New Gravity Housing Conference** was attended by over 110 Passive House curious and by practitioners eager to gain practical, marketable skills, and to delve into case studies. The **Groundbreakers Awards** attendance was 110 and the small group breakout rooms allowed for meeting-up with colleagues old and new. The **Sustainability Symposium** was planned to be held live in the spring but ended up being rescheduled to a fall in-person event, and then was scaled back to virtual only. In the end it was extended over the course of several months to deliver the selected content. What had always been an event attended by nearly 600 professionals and featuring over 25 sessions, became a 12-session event attended by 211. The 2022 event is scheduled to return to in-person at the Philadelphia Navy Yard; we look forward to this.

Our Webinars on Demand library is now packed with recordings for learning and earning CEUs. It contains almost 100 recorded events ranging from stormwater to community building. GBCI, AIA, Living Future, and PHIUS CEUs are available for these.

Two resources that the Passive House Community published this year are the:

- **Passive Rowhouse Manual**
- **Passive House Habitat for Humanity Report**

Metrics

- **Total CEUs offered:** 28 GBCI / 69 AIA
- **Number of Events:** 36
- **Total Registered Attendees:** 2,715
- **Sustainability Symposium**
  - Registered Attendees: 211
  - Sessions/speakers: 5 Sessions over 3 months
- **New Gravity**
  - Registered Attendees: 110
  - Sessions: 5
- **Groundbreakers**
  - Registered Attendees: 110
  - Awardees: 10
VI. Advocating for change in the built environment through Policy & Advocacy

Green Building United advocates across our region for data-driven policies and robust funding to improve the sustainability, resilience, and health impacts of our built environment. As the challenges of COVID-19 continued throughout the year, we continued to utilize online and digital engagement for our advocacy initiatives and we built partnerships with new organizations and allies. Our focus expanded beyond high-impact emissions reductions in commercial buildings to include the widespread challenges and opportunities in residential homes. GBU assists local and state governments in our region with achieving scaled climate action through legislation and regulations. The backbone of this work is our Policy and Advocacy Committee. Led and supported by staff, the Committee is comprised of GBU members from diverse fields, including: architecture, building operations, construction, engineering, financing, product materials, sustainability, urban planning. Meeting monthly, the Committee hears from key lawmakers, analysts, and advocates; has built a compendium of resources; and shares members’ expertise via written comments, testimony, and research to inform legislation and program implementation.

In a year dominated by direct response to the global pandemic, GBU’s members found ways to meaningfully advance climate action through planning and regulatory processes at the state and local levels. GBU members contributed to the victories below by providing education to members and elected officials, signing letters, delivering testimony, and participating in technical workshops.

Advocacy Highlight

In 2021, both our Delaware and Lehigh Valley Communities exemplified their commitment to ensuring that Green Building United is fulfilling its mission and vision in every corner of our region by actively participating in climate action planning processes in the City of Bethlehem and in the State of Delaware. As a membership organization, Green Building United served on stakeholder working groups and provided technical expertise in advisory workshops to help inform the planning processes.

- The landscape of Bethlehem has changed tremendously over the last years. The city has experienced flooding from downpours as well as an increase in asthma and allergy cases. A thoughtful climate action plan can prepare the city for the future and increase the livability for its citizens.” - Christa Kraftician, Lehigh Valley Community Chair

- In 2021, GBU hosted an event with State Senator Hansen, Habitat for Humanity and Imani Energy to share perspectives on how to ensure that climate resiliency in DE is planned and implemented in an intentional, equitable, and efficient manner. Jeffrey Richardson, provided this slide which sums up the challenge well:

Challenging the Climate Issue Paradigm

From fixing buildings—to fixing systems
From sustainable materials/technology to sustainable lives
From functioning within inequality to challenging inequality
From aversion to issues of race to addressing race deeply
From Green Gentrification to Participatory Community Development

- Jeffrey Richardson, Founder, Imani Energy
VII. Helping Owners and Operators manage more strategically

Advancing green built environment strategies happens by measuring performance, setting goals, and implementing projects. We work with owners of some of the largest buildings in our region to track energy and water use, carbon emissions, and more through the Energy Benchmarking Program and the Philadelphia 2030 District. And we work with schools and school districts to reduce utility demand as well as infuse a sustainability mindset throughout the operations.

As companies and their employees navigate the effects of the global pandemic and explore return-to-work strategies and flexible work arrangements, our membership is challenged to understand how we will end up using our buildings and the built environment at large. During COVID, operators and managers faced a double-edged sword of meeting energy reductions while instituting increased air ventilation strategies, adjusting schedules, and enhancing indoor environments protocols in fully leased buildings that had actual building utilization at all-time lows. To accommodate this reality, the City of Philadelphia continued to provide extensions and lenience for energy and water use reporting. Despite the many challenges, owners and managers were able to submit benchmarking reports by the year’s end for an 83% compliance rate with the Philadelphia Building Energy Benchmarking Program, a 9% increase over 2020.

In 2021, The 2030 District broke through the artificial boundaries of the traditional district to expand across the city and grew by 29 million sf with the addition of the School District of Philadelphia’s buildings and a portfolio from the Drexel a campus. While the pandemic posed many challenges to the building owners, managers, and operators of our region, our Philadelphia 2030 District partners remained committed to meeting their ambitious goals of:

- reducing energy use (50% carbon reduction by 2030 over 2015)
- reducing water use (50% water use by 2030 over 2015) at the building level
- curbing transportation emissions
- and improving stormwater management districtwide.

The most recent 2030 District Annual Report can be found here:
Philadelphia 2030 District: [2020 Annual Report (arcgis.com)]

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**Summary**
- Total kWh/$ Savings identified: Benchmarking and 2030 District - Average $2,489/year savings per building; Pathways - 143,590 kWh/$21,091 in potential savings from 2 audits!
- Number of total buildings active in reducing energy use: Benchmarking Program - 2,375 buildings; 2030 District - 49MM sf, Pathways - 25 schools
- Number of partners: 2030 District - 36; Benchmarking Program - 1500

**Metrics**
- Buildings Reported: 2,375
- Median Energy Star (ES) Score: 61
- Support touchpoints: 100+
- Property partners - 19
- Square Feet committed – 49+ million sq ft
- Percent to energy goal - reduced by 43.4% - 6.6% to meet goal in traditional 2030 boundary (meaning this excludes School District and Drexel)
- Number of sponsors - 3
VIII. Supporting climate action in communities through Strategic Initiatives

We're committed to improving the climate resilience and the healthy indoor environment of our region’s homes and communities by building strong networks, sharing resources, and supporting community-based projects.

The implications of a changing climate are felt around the globe, and our region is no exception. From more frequent tornado warnings, unprecedented flooding, violent derachos, and dangerous heat waves, we know that extreme weather poses serious risks to our communities. In fact, due to high rates of poverty and poor housing conditions, FEMA named Philadelphia as the most vulnerable county to heat waves, leading to an estimated eight deaths per year. This year, the condition of our homes, schools, offices, and businesses have come into the forefront as we seek refuge in a post-pandemic and changing world. Through programs and coalition building, we make the built environment central to climate action in our communities.

HERE4CJ touches on almost every element of the Green Building United Vision with a special emphasis on Housing Equity and Decarbonization. In 2020, GBU and Philly Climate Works launched the Housing Equity Repairs and Electrification for Climate Justice (HERE4CJ) coalition to explore long-term solutions that address the multitude of crises families are facing including: high energy burdens, housing disrepair, health issues, and climate change, with the overarching goal of decarbonizing the housing stock of Philadelphia.

The working group consists of a broad coalition of community members, environmental and climate justice leaders, housing rights advocates, building engineers, workforce development partners, CDC implementers, and finance experts. These stakeholders are working together to make a case for why electrification and housing repairs are critical for the health, environment, and economy of Philadelphians and is an essential anti-displacement strategy.

During 2021, the group: recruited and convened a steering committee to set the agenda for coalition action; began the process to develop a governance structure; and held five steering committee meetings, 12 coordinating committee meetings, and two coalition wide meetings attended by over 27 organizations.

HERE4CJ

Metrics
- Number of Volunteer hours: 200+
- Number of Attendees: 27 organizations
- Number of Coalition members: 25

Coalition members include:
From learning about issues ranging from health IAQ outcomes to climate resilience, our schools are central to the success of our communities. Unfortunately, many school facilities are in need of repairs or replacements of major systems and structures. The Pathways to Green Schools program, supported by Energize Delaware, helps school communities understand the importance of their facilities and prioritize opportunities for energy and carbon savings, as well as support schools’ climate change and environmental education efforts.

In 2021, educators, staff, and students continued to navigate the overwhelming effects of and tremendous challenges pose by the pandemic. Many schools were able to develop new and ongoing sustainability projects that simultaneously improved students’ health and safety and had positive impacts on the environment. The Pathways program continued to support schools by providing energy audits, outdoor air quality monitors, virtual workshops, and mini grant funding.

To help with the ongoing online learning, the program also continued to provide free access to an online library of lesson plans and activities.

Since the conception of the Pathways to Green Schools program, 45 schools across the state have participated, 32 have received an energy audit, 11 schools have been named U.S. DOE Green Ribbon Schools, and 5 schools have received the prestigious NWF Green Flag Award.

Metrics
- Number of schools participating in 2020-21: 13
- Number of schools participating in 2021-22: 25
- Number of past and present participating schools: 57
- Minigrants 9 of an average $2,865
- Number of Energy Audits in 2021: 2; Identified potential savings of 143,590 kWh/ $21,091

School Spotlight
Forwood Elementary School continued to partner with the Pathways program through a most unusual school year including hybrid learning on Zoom and social distancing. Having well established outdoor learning experiences for its in-person students provided a sense of normalcy. Students planted and harvested our school vegetable garden, and while they usually serve the harvest on the cafeteria lunch line, this year they donated fresh vegetables to the Claymont Community Center’s food closet. Students could also connect with nature in the sensory garden for content instruction or to support mindfulness. As an educator, Leona Williams, Fourth Grade Teacher and Green Team Leader, has valued building a network of professionals who share experiences and ideas to benefit students both academically and in social emotional ways in nature.

Teacher Spotlight
I’m excited about so many programs available to our school through Pathways! We have done two projects with grants through Energize Delaware over the past two years. Our first grant allowed us to install water bottle filling stations. In addition to helping us reduce the number of disposable water bottles being brought to school, it was a life-saver when we had to shut off the regular water fountains as a way to prevent COVID from spreading. Our second project, in the spring of 2021, was the installation of LED lighting in our main stairwell and central hallway. What a difference that lighting makes! The new lights offer some cost savings in more ways than one. They use less energy, but they will also save us in maintenance costs. The stairwell is two-stories high, but with the placement of the steps, you cannot use just an extension ladder to change out the bulbs. A scaffolding must be rented and installed, which is quite costly, in order to do any maintenance on the lights. Having the new bulbs that will last for years will save us the scaffolding costs and the area will look great for years to come.

Colleen Naccarato, M.A.T.
Advancement Director & Math Teacher - Christ the Teacher Catholic School
IX. Sustaining the Work (Our Supporters)

Legacy

CertainTeed

Platinum

BBA

Brace E. Brooks & Associates Consulting Engineers

Knoll

Gold

Peco

Fox Rothschild LLP

Silver

Assa Abloy

Burns Mechanical, Inc.

Cohen Seglias Pallas Greenhall & Furman PC

Intech

Larsson & Scheuritzel P.C.

Lutron Electronics Co., Inc.

Penn Lighting Associates

Revolution Recovery

Tozour Energy Systems, Inc.

Small Business Partners

Architectural Glass Institute

Holzraum Systems

Albireo Energy

Bala Consulting Engineers

CICADA Architecture/Planning, Inc.

Hankin Group

Jacobs

LF Driscoll

O’Donnell & Naccarato

Re:Vision Architecture

The Sheward Partnership, LLC

University of Pennsylvania

BluPath Design

Loomis McAfee Architects

X. 2022 Financials

Revenue

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<th>Event attendees</th>
<th>18,170</th>
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<td>Grants and Contracts</td>
<td>424,809</td>
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<tr>
<td>Membership</td>
<td>49,876</td>
<td>6.8%</td>
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<tr>
<td>Event Sponsorships</td>
<td>49,750</td>
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<tr>
<td>Sustaining Partners</td>
<td>143,600</td>
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<tr>
<td>Individual Giving</td>
<td>29,008</td>
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<tr>
<td>Investments</td>
<td>14,996</td>
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<tr>
<td>Misc</td>
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<td>0.3%</td>
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<tr>
<td><strong>Total Revenue</strong></td>
<td><strong>$732,306</strong></td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>

Expenses

| Admin | 68,300 | 10% |
| Fundraising | 61,900 | 9% |
| Program | 543,000 | 81% |
| **Total Expenses** | **$660,506** | **100.0%** |

XI. The Team

Susan Lowry, Chair
XI. The Team

Staff

Amy Cornelius
Interim Executive Director
LeAnne Harvey
Programs and Policy Director
Patricia Ma
Development Director
Marjorie Alexander
Education and Engagement Manager
Winn Costantini
Program Manager
Sophia Winston
Program Manager
Isabelle Coupet
2030 District Intern

2022 Board of Directors

Executive Committee

Susan Lowry
Chair
Vice President, Director, Sales Enablement, Philadelphia Market, JLL

Charles Loomis
Immediate Past Chair
Vice President, Charles Loomis Chariss, McAfee Architects

Bahareh van Boekhold
Co-Vice Chair
Program Manager, Applied Energy Group

Lisa Shulock
Co-Vice Chair
Consultant, Twice Green Consulting

Ariella Maron
Secretary
Founder and Principal, Lion Advisors for Community and Environment

Phil Hinerman
Treasurer
Partner, Fox Rothschild, LLP

Jim McNamara
Development Chair
Senior Procurement Agent, Turner Construction Company

Board

Stephan Finkelman
Director, Engineering Services, Kitchen & Associates

Bill Fisher
Retired, Liberty Property Trust

Donald Haas
General Manager, Brandwyne Realty Trust

Patrick Isaac
Program & Sustainability Manager, Community Ventures

Michael Jouaneh
Manager – Sustainability and Energy Standards, Lutron Electronics Co., Inc.

Sangeetha Sambandam
Project Architect, WRT

Uma Pattarkine
Global ESG Lead & Investment Strategy Analyst, CenterSquare

Yogesh Saoji
Planning and Urban Design Leader, DLR Group

Ryan Spies
Vice President of Sustainability, Clayco

Kristin Sullivan
Senior Manager, Sustainability Solutions, ENERGIE Impact

E. Mitchell Swann
Managing Director, Resolution Management Consultants

Lindsay Walaski
Project Mechanical Engineer, Spotts, Stevens and McCoy