



The Enniscorthy Forum

SUPPORTING THE UNITED NATIONS AGENDA FOR SUSTAINABLE DEVELOPMENT

Enniscorthy Forum Ministerial Summit Summary Report

Executive Summary

On 27-29 June 2023 the Enniscorthy Forum hosted the inaugural summit of the Buildings Action Coalition (agenda attached as Annex 1), with the following major outcomes:

- A **new partnership between the UN and the Buildings Action Coalition (BAC)** was announced. The objective of the partnership is to raise the performance of buildings and the built environment quickly and at global scale to mitigate climate change while delivering on quality of life aspirations (Annex 2).
- **BAC members acceded to the new partnership** in a formal signing ceremony at Enniscorthy Castle (Annex 3).
- The **Buildings Breakthrough Target was presented**. Assembled participants called on the government to endorse the target (Annex 4). The target is now on the political agenda.
- The BAC's **major programme of projects and activities** was launched to accelerate the transition to a sustainable future with tangible outcomes (Annex 5).
- Expert panels engaged with the audience on key elements of the BAC programme:
 - **Building/Grid Integration**: demand reduction and management can enable dynamic interaction between the provision of quality energy services and low- or non-carbon electricity supply.
 - **Retrofits**: Extensive building retrofits are the only realistic path to sustainability.
 - **Ukraine's** human environment must be rebuilt, but it can go from devastation to a model for sustainable communities, retaining their Ukrainian nature, with proper investment.
 - **Global South Dialogue**: The world can rewrite the relationship between the developed North and developing South while securing a sustainable, prosperous future for both that meets quality of life aspirations.
 - **Workforce Training**: Education and training are vital to transformations at scale. For education and training to be effective catalysts, they need to both form and be informed by an ethos of sustainability rooted in the broader community.



- Ministers from the Irish Government joined the event, and a BAC delegation subsequently met with ministers to brief them on the key outcomes.

Preface from Enniscorthy Forum Chief Executive Officer Barbara-Anne Murphy

Improving the performance of buildings and the built environment is the one action that can deliver integrated solutions at scale in a timely fashion to produce tangible outcomes on economic, social, and environmental resilience, quality of life, and climate, among other desirable outcomes, and in the process advance employment, innovation, and investment.

The launch of the collaboration between the Buildings Action Coalition and the United Nations Environment Programme is an exciting development for the Enniscorthy Forum and is proof that small local organisations can achieve big things with the right support, the right partners and the right vision. The Building Action Coalition has far-reaching ambitions to help transform the built environment worldwide.

Since our foundation in 2020, the Enniscorthy Forum has received significant support from the Irish government, industry partners and Buildings Action Coalition members. Signing this MOU with UNEP brings our work to the next level and increases our reach and influence as well as that of the membership of the Buildings Action Coalition.

The Buildings Action Coalition supports UNEP's work. Our activities include advocating for market transformation to achieve high performance buildings, developing guidelines that will help deliver net zero buildings and working closely with all stakeholders to lead and support this much-needed transition. We have a significant programme of collaborations including outreach, research, academic studies, construction projects and education and training schemes. We will expand the global membership network of the Buildings Action Coalition to more countries and more stakeholders. We will mobilise resources and disseminate knowledge, experience and best practices to transition towards zero emission buildings and construction.

As part of this work we have called on the Irish government to sign up to the Buildings Breakthrough Target. This is an important initiative that urges countries to ensure that near-zero emission and resilient buildings are the new normal by 2030. To date 16 countries have signed up to it and we need Ireland to join them.

As part of the new MOU, UNEP and UNEP's Global Alliance for Buildings and Construction (Global ABC) have now become lead partners of the Enniscorthy Forum and the Buildings Action Coalition is now aligned with the Global ABC.

Our thanks to all the speakers, sponsors, and panellists for making this inaugural summit a success.



New partnership between the UN and the Buildings Action Coalition

The Enniscorthy Forum, a not-for-profit organisation, was set up in 2020 by the Enniscorthy & District Chamber of Commerce to advance the United Nations sustainable development agenda. In September 2022, the Enniscorthy Forum launched the Buildings Action Coalition (BAC) to advance high performance buildings.

The Enniscorthy Forum has inked a memorandum of understanding (MOU) with the UN Environment Programme (UNEP) to collaborate on a worldwide mission to improve buildings to reduce carbon emissions while keeping them affordable, comfortable, and healthy. The BAC will work with UNEP to disseminate the transformative benefits of high-performance buildings and to deploy best practices in planning, design and construction across the world. The purpose of the MOU is set forth in Annex 2.

UNEP considers that collaboration with the Enniscorthy Forum will help raise the performance of buildings and the built environment on a global scale. Experts from Ireland helped initiate the UN's High Performance Buildings Initiative that in turn prompted creation of the Enniscorthy Forum. UNEP expressed appreciation for the Irish Government's support of the Enniscorthy Forum and the activities of the BAC.

At a signing ceremony organised at Enniscorthy Castle, coalition members who signed onto the MOU included the Building Energy Exchange (New York City), passivhausMaine (Freeport, Maine), Passive House Network (national network based in New York City), Passive House Institute (Darmstadt, Germany), Passive House Canada (Vancouver, Canada), River Clyde Homes (Glasgow, Scotland), and Onion Flats (Philadelphia, Pennsylvania). Letters of Intent to join the MOU were signed by Passive House for Everyone (Brooklyn, New York), Zero Ambitions Partners (Dublin, Ireland), A2M Architecture (Brussels, Belgium), AECB (Lancashire, UK), and Passive House Massachusetts (Boston, Massachusetts).

Buildings Breakthrough Target

A senior official from the French government presented the buildings breakthrough target, observing that improving the performance of buildings and the built environment is imperative if the objectives set forth in the Paris Climate Agreement are to be achieved. They look forward to working with the Enniscorthy Forum to accelerate achievement of tangible progress towards the Buildings Breakthrough Target and sought the assistance of the BAC to help bring more countries to endorse the Buildings Breakthrough Target that reads:

*“Near zero-emission and resilient **BUILDINGS** are the new normal by 2030”*

The Paris Agreement commits the world to limit the rise in global temperature to well below 2°C and pursue efforts to limit it to 1.5°C compared to pre-industrial levels. To keep the 1.5°C target alive, global emissions of GHGs must be halved by 2030 and reduced to net zero by 2050. Key to achieving this will be the Glasgow Breakthrough Agenda, launched at COP26, an international clean technology plan to keep 1.5°C in reach.

The first five breakthrough targets launched at COP26 were clean power, road transport, steel, hydrogen, and agriculture. Countries are working to launch new Breakthroughs in new sectors – such as France and Morocco on buildings – that are being launched in 2023. Ireland

has endorsed the first five targets and the target on buildings is aligned with Irish policy. Participants called for Ireland to endorse the Buildings Breakthrough Target.

BAC programme of projects and activities

The outline of the BAC programme can be found in Annex 5, with a fuller presentation on the website of the Enniscorthy Forum (<https://enniscorthyforum.org/wp-content/uploads/2023/06/Survey-of-2023-Projects-2.pdf>). The projects are conceived to support the UN 2030 Agenda and its Sustainable Development Goals, and more immediately, the objectives of the GlobalABC and the Buildings Breakthrough Target set forth by the governments of France and Morocco.

Innovation will be critical for advancing attainment of the breakthrough target. Innovations can be technical, such as development of insulation materials using plastic wastes recovered from the ocean or bio sources such as coconut fibre or straw hemp, they can be corporate policy innovations such as setting an internal price on carbon to reorient product slates, or they can be government policy innovations such as retrofit obligations for home sales or rentals. Market drivers will be critically important to accelerating the retrofit market. The market will place value on sustainability. Pilot demonstrations will be key to getting the transitions to happen by showing what is possible.

Expert panels engaged with the audience on key elements of the BAC programme:

Building/Grid Integration: buildings, the power grid, and ICT systems that link the two are at the heart of advanced communities' infrastructure. Decarbonization of the world's buildings to cut GHG emissions will lean on their electrification and a shift to electricity produced from non-carbon primary energy. The shift requires demand reduction and energy management through energy efficiency measures and smart building-grid integration. Building decarbonization efforts must interact dynamically with the non-carbon electricity supply, the two being optimized as a single system.

Building-grid integration needs to accommodate recent developments in both the grid and buildings. For grids, there is a secular trend away from central generation and coordination toward distributed generation. The trend contributes to decarbonization, relieves the challenge that dense load centres impose on grid managers, and contributes to energy security in the case of grid failure. For buildings, the shift is toward highly integrated whole building systems that deliver comfort and affordability for occupants with a light or no carbon footprint. Building-grid integration must be designed to accommodate variable renewable energy resources with responsive demand.

A specific example of the need for effective integration can be found in Ireland. The price of natural gas went through the roof following the Russian invasion of Ukraine, and a whole slew of intermittent wind energy was brought on line. There were important consequences for reliability and prices. Reducing demand and improving its price responsiveness are important objectives if reliability is to be secured and prices moderated.

Retrofits: Extensive building retrofits are the only realistic path to sustainability. Operational carbon emissions associated with the energy services buildings require represent 30-40% of CO₂ emissions in many countries. Embedded carbon can be moderated by re-using various elements of existing buildings. The slow rate at which buildings are retired despite their often-

poor quality, the carbon footprint of demolition, and requirements for cultural preservation mean that large scale building retrofits are the only realistic path to sustainability of the built environment in the developed world. Building retrofits relate beyond individual buildings to surrounding buildings, distributed power generation, and the provision of the services that comprise the infrastructure of a community and that shape that community's appetite for energy. The overarching goals include people-oriented urban system optimization and decarbonization.

It is an imperative to accelerate and deepen the uptake of retrofits. Importantly, there is no point in refurbishing buildings half-way since today's half-way solutions will have to be redone in a few short years. The analysis of the benefits should include a measure of the social cost of carbon. Mandates, standards, and obligations on data gathering, reporting, and retrofitting are very effective, and attendees pointed to the passive house standard as an appropriate target for policy.

Ukraine's human environment must be rebuilt. With proper investment it can go from devastation to a model for sustainable communities while retaining their Ukrainian nature. Russia's invasion of Ukraine is an inflection point in European history. There is no likely path to a pre-invasion European order and deep, systemic issues lie ahead. Building a new European order will have global repercussions that are contemporaneous with another imperative: global development that is sustainable. Major investments to rebuild Ukraine will be made – the task is to make sure they are the “right” investments. The first step is to get commitment from all significant players rebuilding Ukraine to embrace principles consistent with sustainable development. That requires that we: 1) help Ukrainian communities move from coal and gas as an energy source and as the organizing principle for the local social fabric; 2) engage/educate Ukrainian industry and actors throughout the reconstruction process to help ensure economic, environmental, and social sustainability; 3) encourage/support building design, quality, and construction, and urban layouts and infrastructure (including mobility) reflecting high performance principles; and 4) help create a Ukrainian economy that can build supply industries capable of delivering the products and services needed to reconstruct sustainably. Helping Ukraine will require listening carefully to expressed needs. There will be strong and legitimate calls to meet urgent human needs, but building quickly without regard to a long vision could embed unnecessary inefficiencies.

The Kingspan Group, the main sponsors of the BAC's inaugural summit, described their plans to invest €280m in a new Building Technology Campus in Ukraine. The project will construct a net zero manufacturing site developing innovative products for sale across Europe and to help in the sustainable reconstruction of Ukraine.

Global South Dialogue: The turn to sustainability in buildings, the built environment, and energy, and the UN 2030 Agenda is an opportunity to recast the relationship between the developed North and developing South while helping to secure a sustainable, prosperous future for both. Sustainability is not only about climate change, it also is about meeting global quality of life aspirations. Understanding and delivering the full slate of outcomes that are expected of the built environment will be important, and work is underway in the BAC to develop a draft protocol on high performance buildings for consideration by the UN.

Advances in technology and knowhow mean the South need not take the same development paths that the North did. New infrastructure opportunities are available, and progress has been made North and South in developing options. The South can develop with no-carbon sources and avoid the long term environmental and health burdens of fossil fuels use. Deployment of high-performance buildings designed for integration with renewable energy would provide vital support for renewables. The Global South can play an important role in the high-performance building supply chain, manufacturing building equipment that fits the new built environment paradigm. Nations that were once poor can advance quickly by leveraging the opportunities offered by global markets. Global economic integration will not solve every problem, but it can align the interests in a cost-conscious supply of building products.

Leading governments in the North recognize that their fate is tied to that of the South. The developed world has begun providing capital for investment in sustainable infrastructure in the South. Access to capital would enable the Global South to build sustainable infrastructure and justify the location there of relevant manufacturing capabilities.

Education and Workforce Development: Education and training are vital to building and energy transformation at scale. Available education is the product of an earlier era in buildings that does not appreciate the interaction between the built and natural environments. The logic of sustainability has not been given a defining role in overall curricula design, textbooks, and educational practices, nor in the thought and practice of the larger community of the building industry and its wider industrial ecosystem of suppliers. For education and training to be effective catalysts, they need to both form and be informed by an ethos of sustainability rooted in the broader community, and education needs to play an active role. The aims of education for a sustainable future of buildings include: 1) forming and informing a culture of sustainability; 2) articulating quality of life and environmental impact in an integrated holistic vision; 3) developing comprehensive curricula for building design, construction and management that serve that vision. Integral to quality of life is the impact of buildings on occupants and on a wide variety of social externalities.

The promise of sustainable buildings and energy can be integrated at multiple levels of the educational experience, from research and implementation strategy to dissemination of new professional standards, from university students to the K-12 ranks, from cultivating the next generation of educators to developing workforces. Penn State's Global Building Network (GBN) is leading a multifaceted effort to create a consultative global ecosystem of educators, researchers, and building and energy practitioners to help drive a new vision of science, architecture, engineering, education and community.

Ministers' Briefing: A delegation from the Summit met with Minister Jack Chambers from the Department of Environment, Climate & Communications to brief him and Department officials on the work of The Enniscorthy Forum and the outcomes of the Summit and agreed on further dialogue between the Enniscorthy Forum and Minister Chamber's Department. The delegation also met with Minister for State for Justice and Law Reform Minister James Brown to discuss activities of coalition members that can be adapted for use in Ireland. Meetings with Housing Minister Darragh O'Brien and Environment Minister Eamonn Ryan are scheduled to take place in the autumn.



Annex 1

Buildings, Energy and the UN 2030 Agenda Challenge Ministerial Summit 27-29 June 2023

BUILDINGS ACTION COALITION INAUGURAL EVENT

- MOU WITH THE UNITED NATIONS ENVIRONMENT PROGRAMME
 - SUPPORT FOR THE BUILDINGS BREAKTHROUGH TARGET
- JOINING THE GLOBAL ALLIANCE FOR BUILDINGS & CONSTRUCTION

Tuesday, 27 June

Buildings Action Coalition members pre-meeting 1330

1600-1800 Opening

Energy & Buildings: Reaching for Sustainability in a Turbulent World

Welcome: Barbara-Anne Murphy *CEO, Enniscorthy Forum*
Siobhan O'Dwyer *Global Head of Marketing & Public Affairs, Kingspan Group*

Speakers:

Pat Cox *Former President, European Parliament*
James Gannon *Chair Ireland Commission for Regulation of Utilities*
Justin Schwartz *Executive Vice President and Provost Penn State University*

A Discussion on Buildings & Grid Integration

Kay Aikin *Chief Executive Officer, Dynamic Grid*
Scott Foster *Senior Advisor, Enniscorthy Forum*
Michael Oldak *President, Oldak Consulting*

1900 Dinner **The Buildings Action Coalition (BAC): Vision, Mission, and Agenda**

Barbara-Anne Murphy *Chief Executive Officer, Enniscorthy Forum*
Mark Radka *Chief, Energy & Climate Branch, UN Environment Programme*
Yves-Laurent Sapoval *Conseiller de la directrice générale de l'aménagement, du logement et de la nature, Ministère de la Transition écologique*

A Discussion on BAC Programme of Projects and Activities

Robert Cavey *Senior Advisor, Enniscorthy Forum*
Tomas O'Leary *Managing Director, MosArt*
Richard Yancey *Executive Director, Building Energy Exchange*



Wednesday, 28 June

0900 Retrofit Strategy: Cracking the Tough Nut

Moderator: Tomas O'Leary *Managing Director, MosArt*
Speakers:

James Freihaut, *Head of Department of Architectural Engineering
Penn State University*
Hank Keating *President, Board of Directors, Passive House Massachusetts*
Sebastian Moreno-Vacca *Administrateur, A2M Architects*
Tommy Wells *Director Office of Policy & Legislation Affairs, Washington DC*
Susanne Winkel *Head of Training and Education, Passive House Institute*
Richard Yancey *Executive Director, Building Energy Exchange*

1045-1115 Coffee Break

1115 Pragmatic Solutions to Real Problems

Moderator: Richard Yancey *Executive Director, Building Energy Exchange*

Speakers:

Naomi Beal, *Executive Director, passivehausMAINE*
Breandán Goss *Senior Innovation and Accelerator Manager, Tangent
Trinity College Dublin*
Richard Orr *Head of Asset and Regeneration, River Clyde Homes*
Derek Sinnott *Senior Lecturer in Engineering, Dept of Built Environment
South East Technological University (SETU)*
Wade Smith *Chief Executive Officer, EnergyPrint*

1300 - 1445 Lunch

Buildings and Energy: Achieving Sustainability in a Turbulent World

Moderator: Scott Foster

Speakers:

David Chikvaidze *Chef de Cabinet, UN Office at Geneva*
Ray Pilcher *Chair, UNECE Expert Group on Just Transitions*
Mike Stenson *Project Director, Kingspan Group*
Vershina Anatoly Oleksiyovych *Mayor of Pavlograd*



1500 - 1630 **Sustainable Buildings in Global Perspective: Policy & Strategy**

Moderator: Robert Cavey

Speakers:

Vivian Loftness *University Professor & Paul Mellon Chair in Architecture, Co-Director, Cntr for Building Performance & Diagnostics, Carnegie Mellon Univ.*

Akhilesh Mishra *Ambassador of India to Ireland*

Esther Obonyo *Director, Global Building Network, Penn State*

Andy Simmonds *Chief Executive Officer*

Association for Environment Conscious Building (AECB)

1630-1800 **Sustainable Buildings in Global Perspective: Education & Communication**

Moderator: Robert Cavey *Senior Advisor, Enniscorthy Forum*

Speakers:

Theresa Backhus *Director, Building Innovation Hub*

In Cho *Co-founder of Passive House for Everyone (PHFE)*

Jeffrey Colley *Editor/Publisher Passive House+ Sustainable Building*

Behhinn Kennedy *Lead of Enterprise Support,*

Laois and Offaly Education and Training Board

Tomas O'Leary *Managing Director, MosArt*

Michael Rosenband *Founder, Executive Director at Requity Foundation Inc.*

Henry Wright *Governing Board, United Nations Education Cannot Wait*

1830 - 1930 Reception at the Enniscorthy Castle

Signing accession to the UNEP Memorandum of Understanding

2000 Dinner

Riverside Park Hotel

Thursday 29 June

0900 Visit to Mount Lucas Training Centre, Laois Offaly Education and Training Board, County Offaly.

Main Sponsor – Kingspan Group

Sincere thanks to all our sponsors who made our inaugural event possible.

Annex 2

Memorandum of Understanding with UNEP

Improving the performance of the built environment is the most effective way to meet the climate challenge while improving quality of life globally. Delivering on the promise requires collaboration among all stakeholders in the built environment working quickly and at scale around the world. That is the shared vision on which the Enniscorthy Forum's Buildings Action Coalition and UNEP's GlobalABC partnership is built.

The agreement between the buildings action coalition and UNEP calls for collaboration on the following activities:

- Advocate for market transformation and catalyze real action.
- Develop specific projects and activities, for example, best practices for retrofits, notably for historic buildings; best practices for data centres; and best practices for buildings/grid interface.
- Track progress towards zero emission, efficient, and resilient buildings and construction.
- Develop policy guidance and capacity building for the transition.
- Work with the community of stakeholders and UN bodies to develop objectives, targets, and recommendations to support attainment of the Buildings Breakthrough Target.
- Work with academia worldwide to advance the science of buildings and the built environment and to ensure comprehensive education of the professional communities needed to improve building performance.
- Extend the network of BAC members globally to support countries and construction industry stakeholders to transition towards zero emission, efficient, and resilient buildings and construction.
- Mobilize resources and develop joint projects to support countries and construction industry stakeholders to transition towards zero emission, efficient, and resilient buildings and construction.
- Disseminate knowledge, experience and best practices and work with industry groups to provide demonstrations and proofs of concept.



Annex 3

The Enniscorthy Forum and its Buildings Action Coalition:

The Enniscorthy Forum is a non-profit organisation established in Enniscorthy, Wexford in 2021 with the support of the Irish Government to accelerate attainment of the United Nations' development agenda.

The Forum's work on high-performance buildings was initiated following contact between Scott Foster, then director of the Sustainable Energy Division of the United Nations Economic Commission for Europe, and Enniscorthy-based champions of the Passive House movement. Those discussions led at first to the release of the UN's framework guidelines for energy efficiency standards in buildings and then to the launch of the UN's High Performance Buildings Initiative.

The Enniscorthy Forum has now teamed up with UNEP to raise the performance of the built environment globally by activating critical investments that "move the needle" on decarbonisation, resilience, and improved quality of life.

The Enniscorthy Forum hosts the secretariat for the BAC, whose members include:

- organisations and institutions that operate at community level and that provide implementation-oriented education and assistance to building developers, contractors, architects, and engineers, as well as regulatory and planning officials. They also provide community-centric knowledge development and sharing, connecting with resources and accelerating uptake of high-performance buildings.
- a group of thought leaders in the built environment developing a set of objectives, targets, and recommendations for buildings and the built environment that complement and offer visibility on tangible outcomes for the work of UNEP's Global Alliance for Buildings and Construction (GlobalABC) and the newly-articulated Breakthrough Target for Buildings.
- industry partners providing examples of application of best practices in countries around the world to demonstrate their validity in different climates, stages of development, and regulatory, legislative, and physical infrastructure.

Support for GlobalABC by the BAC is expected to facilitate the transition to zero emission, efficient, and resilient buildings and construction.

The coalition members who signed onto the MOU include the Building Energy Exchange (New York City, USA), passivhausMaine (Freeport, Maine, USA), Passive House Network (national network headquartered in New York City), Passive House Institute (Darmstadt, Germany), Passive House Canada (Vancouver, Canada), River Clyde Homes (Glasgow, Scotland), and Onion Flats (Philadelphia, Pennsylvania). Letters of Intent to join the MOU were signed by Passive House for Everyone (Brooklyn, New York), Zero Ambition Partners (Dublin, Ireland), A2M Architecture (Brussels, Belgium), AECB (Lancashire, UK), and Passive House Massachusetts (Boston, Massachusetts).

Annex 4

Buildings Breakthrough Target

*“Near zero-emission and resilient **BUILDINGS** are the new normal by 2030”*

- Ireland endorsed the previous five targets on power, transport, steel, hydrogen, and agriculture and the buildings target is aligned with Ireland’s own policy framework.
- The Paris Agreement commits the world to limit the rise in global temperature to well below 2°C, and pursue efforts to limit it to 1.5°C (compared to pre-industrial levels). To keep 1.5°C target alive, need to halve global emissions by 2030 and reach global net zero emissions by the middle of the century.
- Key to achieving this will be the Glasgow Breakthrough Agenda, launched at COP26 by a coalition of world leaders whose countries collectively represent over 70% of global GDP.
- The Breakthrough Agenda is an international clean technology plan to keep 1.5°C in reach. It will be taken forward under joint stewardship of Mission Innovation and CEM from COP27 onwards.
- The 1st set of government-led Breakthrough goals launched at COP26 covered five key emitting sectors representing more than 50% of global emissions:
 - **CLEAN POWER** the most affordable and reliable option for all countries to meet their power needs efficiently by 2030.
 - Zero emissions **ROAD TRANSPORT** the new normal – accessible, affordable and sustainable in all regions by 2030.
 - Near zero emissions **STEEL** the preferred choice in global markets, with efficient use and near-zero emission steel production established and growing in every region by 2030.
 - Affordable renewable and low carbon **HYDROGEN** globally available by 2030.
 - Climate-resilient, sustainable **AGRICULTURE** the most attractive and widely adopted option for farmers everywhere by 2030.
- At COP27, countries developed a package of 28 priority actions to decarbonize those sectors in line with the goals of the Paris Agreement.
- Countries are also working to launch new Breakthroughs in new sectors – such as France and Morocco on buildings and Canada on cement. These are being launched during 2023.



Annex 5

Buildings Action Coalition Programme of Projects and Activities

The description of BAC projects and activities is a living document – it will evolve as the work progresses. It provides partners a substantive overview of the program’s current working agenda and, taken as a whole, indicates the underlying vision that guides BAC efforts. The projects are conceived to support the UN 2030 Agenda and its Sustainable Development Goals, and more immediately, the objectives of the GlobalABC and the Buildings Breakthrough Target set forth by the governments of France and Morocco.

The vision underlying the BAC is far-reaching, to deliver on the goals of development in enduring ways. The vision can be expressed several ways.

First, both quality of life and decarbonization are critical to assessing building performance. Quality of life improvements within buildings over the past century have been substantial and are a common metric of development. But those improvements have been fueled with carbon-based energy. The task now is to continue the improvements – high performance buildings can deliver dramatically on a range of criteria – while eliminating the carbon dependence.

That twin vision is well illustrated by the projects outlined herein.

Second, buildings are a portal to dramatic improvements in the entire built environment and the many services it provides. Whether the focus is information and communications technology (ICT), transportation, water, waste, or other facets of an integrated built environment, today’s technology and know-how make possible vast improvements in the quality of life. The improvements can address issues of poverty, resilience, social justice, and the UN principle of leaving no one behind – as well as carbon emissions.

Third, when the link between high performance buildings and non-carbon- based energy services is explored more fully, a broader possibility emerges. By demonstrating what is possible, advanced buildings can facilitate a shift to not only green energy, but to a green economy – one that is better integrated with the natural environment, with less waste, circular economy, multifaceted returns on investment in sustainable progress, and new economic opportunities.

Done at scale and with an eye to equity through design, such transformation can help create new types of communities, *New Buildings & Energy & Communities*, in which the backbone of community design links decarbonized energy services, buildings and the built environment, and new economic and social dynamics.



- I. **Innovation Projects**
 - a. **Building-Grid Integration Research**
 - b. **Retrofit Strategies**
 - 1. Retrofit Best Practices: Ensuring Performance From Retrofits
 - 2. Commercial & Multi-Occupancy Residential Buildings at Community Scale
 - 3. Retrofit Strategies: Rural Residential Buildings
 - 4. Retrofit and Historical Preservation
 - a. **Creating a Global Supply Chain**
 - b. **Data Centers**
 - c. **Standardizing Building EE Progress & Creating a Credits Market**
 - d. **Building Performance Verification**

- II. **Communications**
 - a. **Brussels-Washington DC Building Performance Collaboration**
 - b. **Strategic Communications Group**
 - c. **Global South Outreach Initiative**
 - d. **Business and Economic Case(s) for High Performance Buildings**
 - e. **Ice Box Challenge Initiative**

- III. **Education, Workforce & Community Development**
 - a. **Curriculum Transformation Task Force**
 - b. **ASHRAE Education and Outreach Initiative**
 - c. **Paths to Workforce and Community Development**
 - 1. Passive House Education Through Creative Arts
 - 2. Building Sustainability for Students: A TransAtlantic Partnership
 - 3. Requity Project: Students Building Skills, Homes & Community
 - 4. Workforce Education in Sustainable Buildings & Energy: Creating a Paradigm & Roadmap(s)

- IV. **Macro Strategy & Policy**
 - a. **Collaborative Cities Initiative**
 - b. **Future of Utility Regulation Task Force**
 - c. **Building Energy Codes**
 - d. **Draft UN Protocol on High Performance Buildings**