Memorandum of Understanding
between
the United Nations Economic Commission for Europe (UNECE)
and
Green Building Alliance

WHEREAS, the United Nations Economic Commission for Europe (hereinafter referred to as "UNECE") is mandated to carry out a programme of work in the field of sustainable energy with a view to providing access to affordable and clean energy to all, in line with the Sustainable Energy for All initiative of the United Nations' Secretary-General, and helping to reduce greenhouse gas emissions and the carbon footprint of the energy sector;

WHEREAS, the UNECE, through its Committees on Sustainable Energy and Housing and Land Management, its Group of Experts on Energy Efficiency, and the Joint Task Force on Energy Efficiency Standards in Buildings, promotes development and dissemination of international standards in energy efficiency, and specifically, the Geneva UN Charter on Sustainable Housing and the UNECE Framework Guidelines for Energy Efficiency Standards in Buildings (hereinafter referred to as "Framework"), attached hereto as Annex 1;

WHEREAS, to further the UNECE's work in promoting the principles of energy efficiency as set forth in the Framework, the UNECE is seeking to partner with certain non-governmental organisations throughout the world with demonstrated capabilities to support and advance the principles of the Framework and desires to establish a network of designated International Centres of Excellence on High Performance Buildings (each individually, "ICE-HPB" and collectively, the "Network") to work with the UNECE to support and advance the principles of the Framework;

WHEREAS, Green Building Alliance (hereinafter referred to as "GBA") is an independent non-profit organization located at 33 Terminal Way, Suite 331, Pittsburgh, PA 15219, USA ("Green Building Alliance Office"), incorporated under the laws of the Commonwealth of Pennsylvania, that advances energy efficiency in the built environment through stakeholder education, practitioner training, network building, policy implementation, project technical assistance, research, and applicable resources and tools, and GBA seeks to partner with the UNECE to support and advance the principles of the Framework;

WHEREAS, the UNECE has found GBA to have the demonstrated capabilities to support and advance the principles of the Framework necessary to become a designated ICE-HPB;

WHEREAS, the UNECE and GBA consider that Praxis Inc., a sustainability consultancy, has assisted with the development of the Framework and may continue to assist to advance the principles of the Framework through work with and among the ICE-HPBs and the Network;

WHEREAS, the UNECE and GBA agree that the ICE-HPBs and the Network are separate and independent from the Global Building Network, a consortium of academic research institutions established by a Memorandum of Understanding executed on or about May 31, 2018, by and between the UNECE and

Pennsylvania State University, also to support and advance the principles of the Framework; however, it is anticipated that there will be beneficial collaboration among and between the UNECE, the Global Building Network, the ICE-HPBs and the Network.

NOW THEREFORE, the UNECE, represented by the Executive Secretary of the UNECE, and GBA, represented by the Executive Director of GBA (hereinafter referred to collectively as "the Parties"), have entered into the present Memorandum of Understanding (hereinafter referred to as "MoU") as follows:

Article I
Purpose

1.1. The purpose of this MoU is to provide a framework for establishing and operating ICE-HPBs to support and advance the principles of the Framework. The target group(s) who will benefit from cooperation under this MoU are described in the second paragraph of Annex 2. Each ICE-HPB designated by the UNECE will operate as an independent organisation but in partnership with the UNECE and its Group of Experts of Energy Efficiency and the Joint Task Force on Energy Efficiency Standards in Buildings, and will work with the UNECE to pursue programmatic and funding opportunities to collaborate and cooperate with the UNECE and other ICE-HPBs within the Network, as further articulated in Article II below.

Article II
Areas of Cooperation

2.1. This MoU outlines the activities needed to establish and operate an ICE-HPB, and defines the division of responsibilities between the Parties.

2.2. The UNECE hereby designates GBA as an ICE-HPB, to be physically located at the Green Building Alliance Office, which will perform a number of activities that may be referred to as "projects," in accordance with the Framework, generally, and, more particularly, with the Terms of Reference for the GBA ICE-HPB (attached as Annex 2).

Article III
Implementation

3.1. The Parties agree to carry out their respective responsibilities in accordance with the provisions of this MoU. The Parties agree to join efforts and to maintain a close working relationship in order to achieve the objectives of collaboration under the present MoU.

3.2. The UNECE will provide guidance to the GBA ICE-HPB through engagement of its experts in ICE-HPB operations where possible and practicable.

3.3. The Parties will collaborate in joint projects, in the UNECE member States and beyond, that fall under the Framework, generally, and more particularly, under the Terms of Reference of GBA ICE-HPB.

Such projects may be undertaken in collaboration with other ICE-HPBs within the Network or with the Network as a whole. The GBA ICE-HPB will inform the Committee on Sustainable Energy and the Group of Experts on Energy Efficiency of its work and results either directly or through the Network as a collective report.

3.4. The UNECE will encourage communication, coordination and collaboration among the GBA ICE-HPB and the other ICE-HPBs within the Network, and the Global Buildings Network, which will be beneficial, and may be facilitated by Praxis, as well as to pursue, to the extent practicable, funding opportunities to benefit the activities which may be undertaken pursuant to this MoU to support and advance the principles of the Framework.

3.5.. As applicable and if found necessary by the Parties, each project shall contain the terms and conditions for its implementation, including, but not limited to, clear deliverables, timeframes, and funding arrangements, specified in a separate project document to be agreed upon and signed by both Parties.

3.6. Project documents may be modified at any time by written agreement of the Parties through their MoU Focal Points designated in Article IV.

3.7. The Parties shall refrain from any action that may adversely affect the interests of the other Party and shall fulfil their commitments with fullest regard for the terms and conditions of this MoU and the objectives of GBA and UNECE.

3.8. In no event shall this MoU, or any amendment hereof, operate to create financial or administrative or legal obligations on the part of either Party, nor does it prevent the Parties from pursuing the objectives set forth in this MoU on their own or with other third parties.

Article IV
MoU Focal Points

4.1. The Parties have designated MoU Focal Points to plan and develop activities under this MoU and ensure its proper implementation:

UNECE:
Mr. Scott Foster
Director
Sustainable Energy Division
United Nations Economic Commission for Europe
Palais des Nations, 8-14, Avenue de la Paix,
1211 Geneva 10,
Switzerland
Tel.: +41 22 917 2444
Email: scott.foster@un.org

Green Building Alliance:
Jenna Cramer
Executive Director
Green Building Alliance
33 Terminal Way, Suite 331
Pittsburgh, PA 15219
USA
Tel : +1 412 638 5689
Email : jennac@gbapgh.org

Article V
Intellectual Property rights

5.1. The Parties agree that there will be no joint intellectual property rights.

5.2. The intellectual property rights for materials or products developed and provided by UNECE shall rest with UNECE. The intellectual property rights for materials or products developed and provided by GBA shall rest with GBA.

Article VI
Reporting requirements

6.1. The Parties shall keep each other informed of all relevant activities pertaining to this collaboration and shall hold consultations as appropriate, in order to evaluate the progress in the implementation of this MoU and to revise and develop new plans for current or prospective activities.

Article VII
Settlement of disputes

7.1. The Parties shall attempt to resolve any dispute arising out of or relating to the MoU by amicable and good-faith consultations and direct negotiations between the Parties.

Article VIII
Privileges and Immunities

8.1. Nothing in this MoU shall be deemed a waiver, expressly or implied, of any of the privileges and immunities of the United Nations, including its subsidiary organs.

Article IX
General Provisions

9.1. Entry into force and duration: This MoU shall enter into force upon signature by both Parties and will remain in effect for a period of three (3) years. This MoU will be automatically renewed at the end of the term for a successive period of three (3) years unless terminated by the Parties in accordance with the provisions specified in Section 9.3 herein.

9.2. Amendments: This MoU may be amended only by written agreement of both Parties.

9.3. Termination: This MoU may be terminated by mutual agreement of the Parties or by either Party providing sixty (60) days advance written notice to the other Party. In any such event, the Parties shall take all necessary actions as required to promptly and in an orderly manner terminate any on-going activities or projects carried out under this MoU in a cost-effective manner.

9.4. The UNECE shall develop an emblem which will demonstrate that an organisation has been designated an ICE-HPB by the UNECE (hereinafter referred to as the "Emblem"). Upon development of the Emblem, GBA shall hereby be authorized, during the term of this MoU or until such time as the MoU is terminated pursuant to Section 9.3 herein, to use the Emblem on its literature or other materials and on its website. Upon termination of the MoU, GBA shall remove the Emblem from its website and not utilize it on any of its literature or other materials produced thereafter. The UNECE is hereby authorized, during the term of this MoU or until such time as the MoU is terminated pursuant to Section 9.3 herein, to use GBA's logo in its literature or other materials or on its website for the purpose of demonstrating that GBA has been designated as an ICE-HPB by the UNECE. Upon termination of the MoU, the UNECE shall remove GBA's logo from its website and not utilize it on any of its literature or other materials produced thereafter. Any use, not provided for in this Section 9.4, of a Party's name, emblem, logo or official seal by the other Party, in any manner whatsoever, shall be prohibited unless expressly authorized in writing by the Parties.

9.5. The Parties recognize that they are legally separate and independent of each other. Neither Party has the authority to act on behalf of the other.

9.6. The United Nations has found sexual exploitation and sexual abuse to violate universally recognized international legal norms and standards. Such conduct is prohibited by the United Nations as provided in the Secretary-General's Bulletin dated October 9, 2003 (ST/SGB/2003/13). GBA has adopted a policy against harassment, bias and discrimination for its organization and, by entering into this MoU with the UNECE, accepts the United Nations' standards in the Secretary-General's Bulletin referenced above. Failure on GBA's part to take preventive measures against sexual exploitation or sexual abuse, to investigate allegations thereof, or to take corrective action when sexual exploitation or sexual abuse has occurred, are grounds for termination of this MoU.

9.7. This MoU does not create legally binding obligations between the Parties.

9.8. The implementation of the MOU does not have financial or budgetary implications for either Party.

Article X
Notices

10.1 Any notices required by this MoU shall be given in writing and delivered to the following addresses:

UNECE:
Mr. Scott Foster
Director
Sustainable Energy Division
United Nations Economic Commission for Europe
Palais des Nations, 8-14, Avenue de la Paix,
1211 Geneva 10,
Switzerland
Tel.: +41 22 917 2444
Email: scott.foster@un.org

Green Building Alliance:
Jenna Cramer
Executive Director
Green Building Alliance
33 Terminal Way, Suite 331
Pittsburgh, PA 15219 USA
Tel: +1 412 773 6000
Email: jennac@gbapgh.org

or at such other address as may be designated in writing in accordance with the terms of this notice provision.

Each Party to this MoU hereby warrants and represents that the person signing below is duly authorized under applicable law and regulation to execute this MoU on behalf of its respective Party and thereby to bind such Party to the terms hereof.

IN WITNESS WHEREOF, the Parties have signed this MoU in two (2) originals in the English language on the date set forth below:

For UNECE

Signature: ----------

Olga Algayerova
Executive Secretary
UNECE

Date: _____

For Green Building Alliance

Signature: ----------

Jenna Cramer
Executive Director
Green Building Alliance

Date: _____

* * *

Annex 1

Framework guidelines for energy efficiency standards in buildings

Global transformation of buildings in the built environment: Framing the design, delivery and operation of buildings as integrated, thermodynamic and environmental systems

I. Introduction

1. Buildings are central to meeting the sustainability challenge. In the developed world, buildings consume over 70% of the electrical power generated and 40% of primary energy, and are responsible for 40% of CO2 emissions from combustion. While developing countries will need to accommodate 2.4 billion new urban residents by 2050, in Europe 75-90% of buildings standing today are expected to remain in use in 2050. Renewable energy technology alone cannot meet those requirements, despite recent improvements. The energy performance of buildings must be managed, but the capability to meet this challenge is in place.

2. Standards are an effective instrument for addressing energy efficiency in buildings. Development and deployment of standards support the achievements of the targets set by several international initiatives such as the 2030 Agenda for Sustainable Development, the Sustainable Energy for All Initiative, the Geneva UN Charter on Sustainable Housing. The concepts set forth herein go well beyond the incremental, components approach of existing building standards. Rather, they represent a principles-based performance guidance for building energy standards that is outcome-based, anchored in energy actually consumed, and that is designed to project a vision of holistically designed and operated, ultra-high performance buildings as part of an integrated sustainable energy system.

II. Goal

3. Economic growth and the quality of indoor environments have depended on increased primary energy use. Shifting that reliance to renewables requires a holistic, systems approach to building design, delivery and operation and a paradigm that envisions buildings as energy producers and not solely or primarily as energy sinks. At costs equal or close to those of traditional buildings, it is possible with today's technology to transform buildings to align with the highest standards of health, comfort, well-being and sustainability, including improving energy productivity and reducing CO2 emissions.

4. The energy required by buildings can be reduced to a level that can be supplied largely, perhaps exclusively, by non-carbon-based energy. While further improvement in renewable energy technology and electrical and thermal storage is to be expected, the results will be more immediate and robust if buildings are transformed fundamentally in terms of their energy performance. Limiting building heating and cooling requirements to 25 kWh/m2-a (final energy in conditioned space) each reduces energy needs sufficiently to permit renewables or zero carbon sources to most or all of the remaining space conditioning energy requirements. Total primary energy use in buildings' conditioned spaces, including heating, ventilation, cooling and hot water, can be limited to 45 kWh/ m2-a or, including plug-in loads (appliances), to 90 kWh/ m2-a. Over time with improvements in technology and materials and with enhanced connections to the built environment, these targets could be improved further. In parallel, there will be need for effective controls for generation, distribution, and emission at full and partial demand loads to match energy use with building and occupant needs.

III. The Principles

5. The principles required for an era of truly sustainable buildings emerge from building science, materials science, digital science, information and communication technology and more. They reflect accumulated lessons learned and best practices of building owners, designers, engineers, builders, managers, policy makers, and more. The principles shift the building industry paradigm from fragmented and serial to holistic and integrated.

6. The principles cannot be prescriptive because of the vast diversity of circumstances and conditions experienced around the world. Rather, the principles provide guidance for planners, builders, and the entire building delivery and management chain as elements of innovative sustainability strategy.

A. Strategic – Buildings must be:

- **Science-based**: design, construction, and management.
- **Financed** through policies recognizing the value of better buildings.
- **Service-oriented**: meet the sustainability demands of the populations served.
- **Integrated** with their built environment life-cycle to connect buildings as energy generators and consumers.
- **Cost effective** to mobilize private investment and entrepreneurs.
- **Performance-monitored** with feedback loops to operations and design tools.
- **Performance-based**: evaluated by system outcomes, not component prescriptions.

B. Design and Construction – Conception/delivery of buildings must be:

- **Holistic and integrated**: recognize buildings and their environment are part of a system.
- **Affordable**: high performance buildings costing the same as or less than in 2016.
- **Validated**: based on energy models that reliably predict actual building performance.
- **Sustainable**: made using sustainable materials, equipment, construction, management and retirement practices.
- **Code-driven**: with local adaptation of global building standards.
- **Skills based**: develop work-forces to provide technology/skills needed for design, construction and operation.

C. Management – Building must be maintained over their life-cycle:

- **Commissioning**: With commissioning and re-commissioning of active systems.
- **Performance-based**: With on-going benchmarking, monitoring & reporting of performance data.
- **Certification**: Maintain certification or labelling to ensure energy performance is incorporated in to asset value.
- **Managed**: professionally managed large or complex buildings with ethos of sustainability & social responsibility.
- **Data-linked**: with advanced building information management capacity, where public infrastructure permits.
- **Evaluated**: On going performance evaluation and improvement.
- **City-scaled**: information analysis and outcomes.
- **Life cycle-based**: with long term analysis.

IV. Implementation

Transformative change in buildings is possible, and the capabilities to create a new world of buildings and energy is in hand or within reach. Already today we have the techniques to achieve climate neutrality in the building sector until 2050/2060. Progress will require follow-on action in five areas to support the *Framework* and make its vision a reality:

- **Dissemination**: national, regional and municipal leaders in the public, private, research and education sectors must be made aware of the framework – its vision, logic, practicality, and advantages.
- **Education**: information, guidance, instruction, and avenues to ongoing dialogue and knowledge resources must be provided to policy, market, and knowledge stakeholders to foster local development of building standards, codes and practices aligned with the Framework.
- **Research**: through collaborations among leaders in science and technology, focused on the frontier challenges in such areas as: (1) building components and materials; (2) building design, construction and monitoring; (3) energy generation anddistribution;

(4) integrated urban systems and life cycle management; and (5) strategies for each country and climate zone to be carbon-free in 2050/2060.

- **Consultation**: formal and informal channels with local policy, market, and knowledge stakeholders for evaluation of impact, dialogue on in impact strategy, addressing discovered or unanticipated challenges, and cultivating global consensus in support of the Framework.
- **Participation**: networks of support and engagement among leading corporations, foundations, universities, professions, civil society and others with the array of resources – intellectual, experiential, financial, and relational – that will be required to make transformation a grass roots or deep market movement.

Annex 2: Terms of Reference for the GBA ICE-HPB

Activities and Projects

The mission of GBA, as an ICE-HPB designated by the UNECE, is to advance the principles of the UNECE Framework Guidelines for Energy Efficiency Standards in Buildings by connecting real estate and design professionals to energy efficiency solutions through education, training, technical assistance, demonstrations, resources, and research. GBA identifies opportunities, navigates barriers to adoption, brokers relationships, and showcases best practices through its partners, projects, data and performance statistics, and published case studies, and will share resources globally through the ICE-HPB network.

GBA helps building developers, owners, operators, and designers save energy and reduce building-based carbon emissions through implementation and adoption of energy efficiency measures and best practices. GBA activities directly support Pittsburgh, the Western Pennsylvania region, regional (including City of Pittsburgh, Allegheny County) and state-wide (Pennsylvania) climate action agendas and are consistent with the UNECE Framework Guidelines for Energy Efficiency Standards in Buildings.

The activities and projects of the GBA ICE-HPB will include:

1. Convening dialogue amongst local and international industry leaders to identify challenges, share best practices and build a growing and diverse community of practice;
2. Gather and disseminate knowledge directly, and through partner organisations, including education and training, exhibits, case studies, research, demonstration projects, and the production of industry focused print and on-line resources;
3. Catalyze design and construction industry tools and training development, and identify potential barriers to adoption and implementation; and
4. Foster public demand and support for best practices through recognition and awards, open houses and tours, communication and marketing campaigns, public events, and demonstration projects.