## CCA Project, supported by the BEA platform



## Impact Report

## 2019-2020

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## Who we are

# The World Green Building Council (WorldGBC) catalyses the uptake of sustainable buildings for everyone, everywhere.

Transforming the building and construction sector across three strategic areas climate action, health and wellbeing, and resources and circularity - we are a global action network of 70 Green Building Councils around the globe.

As members of the UN Global Compact, we work with businesses, organisations and governments to drive the ambitions of the Paris Agreement and UN Global Goals for Sustainable Development. Through a systems change approach, our network is leading the industry towards a net zero carbon, healthy, equitable and resilient built environment.

### Green Building Councils are independent, non-profit organisations accelerating the uptake of sustainable buildings.

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As members of WorldGBC, they convene businesses and governments to collectively drive environmental, economic and social impact within the built environment on a national, regional and global scale.

### www.worldgbc.org



## Foreword by our CEO



CRISTINA GAMBOA CEO, WorldGBC

A third of the world's energy goes into powering lighting, heating and cooling within buildings. So it is clear that we cannot prevent dangerous climate change without turning our attention to the built environment. **Building energy efficiency** is a climate imperative. and one that is needed more than ever for green recovery, job creation and to help the world to **Build Back Better after a** challenging year.

### The time for action is now.

The building and construction sector are crucial players in the sustainability agenda, but this has also been traditionally a fragmented sector. We must work together to address the climate challenge - and the **Climate Cities Action Project** demonstrates the progress which can be made when we do so. The right partnerships and collaborative approaches are so important in unlocking the sector's contribution to climate action and sustainable development. They bring us together, inspire innovation and turn ideas into tangible projects which benefit our communities, our cities and, of course, our world.

The result of our collaboration with our Green Building Councils, the **Building Efficiency Accelerator (BEA)** platform coordinated by our partner **World Resources Institute (WRI)**, and our scale-up partner **P4G**, has been staggering. Over **90 government officials** have now actively collaborated with over 100 partners, who have delivered technical and legal guidance for each city's policy to be designed and published. As always, we extend our thanks to P4G, because without their ongoing support we could not have achieved such ambitious results. Radical collaboration across sectors and stakeholders is truly a necessary pillar for advancing the built environment movement.

We look forward to keeping up the momentum of the **Cities Climate Action Project** as it progresses into its third year, embracing the decarbonisation challenge as we continue our movement towards sustainable buildings for everyone, everywhere. Continuing with the strong momentum we have built to increase the focus on net zero, and as part of **WorldGBC Global Policy Advocacy** work stream, the project will support **Accelerating Net Zero Cities** across Latin America and the rest of the world, by leveraging the best practices and lessons learned from the past years, and providing capacity building for local and national governments to work on structuring and delivering roadmaps to decarbonize the built environment.

## Foreword by P4G



IAN DE CRUZ Global Director, P4G (Partnering for Green Growth and Global Goals 2030)

P4G scales bold solutions that can deliver transformative impact in developing countries. We're a global platform pioneering green partnerships to deliver sustainable development and climate action impact in food, water, energy, cities and the circular economy. There is a huge opportunity to create the radical change we need to achieve sustainable cities.

We co-create and accelerate market-based partnerships that are high-risk, high-impact enterprises that can bring in investors and policymakers to accelerate their models of sustainable economic growth. This is how we're bridging the gap between the investment and development agendas. This is how we're pioneering green partnerships and investing in impact.

We began our journey with **WorldGBC** two years ago. Through our approach of catalytic funding, strategic leadership, and deep engagement of our influential global ecosystem, we've increased the number of cities in Latin America, which are designing and implementing energy and resource efficiency policies.

The **Cities Climate Action Project** is a true example of what partnerships can achieve. It demonstrates that when the governments and the private sector collaborate towards a common goal, in this case an energy efficient built environment which will sustain our way of life, revolutionary change can happen.

We are proud supporters of the **WorldGBC Cities Climate Action Project** and the **BEA** platform. The next step for this partnership is creating green finance products and institutionalizing GBCs and codes into not only energy efficient buildings but also net zero homes.

There is a huge opportunity to create the radical change we need to achieve sustainable cities. Together, we can leverage our partnerships and investors to create an inclusive built environment that works for all people and our planet.

## Introduction

# Four billion people are now vulnerable to the impacts of climate change.

In a region like Latin America, with 624 million habitants and over 80 percent of the population living in cities in 2019, achieving the goals of the Paris Agreement requires ambitious policies to set a clear path towards decarbonisation by 2050.

The building and construction sector has a significant importance in the sustainability agenda, but it has traditionally been fragmented, slowing the scaling of innovation, improvements in productivity and best practice from one project to another. This is why the right partnerships and collaborative approaches are so important in unlocking the sector's contribution to climate action and sustainable development.

Green Building Councils (GBCs) in Latin America are making significant contributions through WorldGBC's Climate Cities Action Project. Between 2019 and 2020 and in partnership with a platform coordinated by World Resources Institute (WRI) known as Building Efficiency Accelerator (BEA), GBCs in the region have introduced four new building efficiency policies and ten policies are in development across countries like Chile, Costa Rica, El Salvador and Guatemala.

The **WorldGBC Cities Climate Action Project (CCA)**, setup in 2019, aims to deliver policies that promote resource efficiency in buildings, with an emphasis on energy. The project extends the proven framework of the **Building Efficiency Accelerator (BEA)** to help city governments, private companies and NGOs work together to deliver energy efficiency in buildings at scale.

Between 2019 - 2020, with the leadership of the **Green Building Councils (GBCs)**, four building energy efficiency policies have been approved in the cities of Bogota and Monteria in Colombia, and at the state level in Campeche and Yucatan in Mexico. Another ten policies are in development across Latin America in countries like Chile, Costa Rica, El Salvador and Guatemala. Some of those policies have considered water efficiency too. These policies are enabling savings in energy for different buildings typologies, new systems for monitoring performance and access to data, application of new solutions and practices.

The **BEA** platform, coordinated by our partner **WRI**, is an international network bringing transformational change in building practices. The platform relies on its partners such as WorldGBC, to help scale impact by leveraging proven frameworks and **BEA** resources to move the needle on building efficiency policies. **WorldGBC CCA** project works to do just this while aligning with WorldGBC whole life carbon vision and **Advancing Net Zero** programme. The **CCA** supports a network of cities and GBCs through peer learning and knowledge exchange to accelerate local policy design and implementation

Over 90 government officials worked on the management and leadership of the project from the city and state perspectives. In addition, working groups from each country convened around 100 partners from different areas of expertise to deliver technical, legal, and business support for each policy to be structured and published.

# Our impact 2019- 2020

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**6 new energy efficiency policies, codes or standards** for buildings in place in Mexico and Colombia

- Bogotá: Res. 1874 2019, estimated positive impact on 5 million individuals in the capital city
- Cali: Res. 4133 2019
- Montería: Res. 163 2019
- State of Yucatán:
  - Energy efficiency and comfort criteria applicable to public buildings in the state of Yucatán. Estimated positive impact: The Technical Standard on Energy Efficiency involves 59 agencies and 2,900 buildings of the government of the state of Yucatán.
- State of Campeche:
  - Energy Policy of the Energy Management System of the State Government Palace. Estimated positive impact: Reduction in energy consumption of 44,880 kWh per year and the reduction of emissions to the atmosphere of almost 23 tons of carbon dioxide equivalent each year.
  - Energy Efficiency Guidelines that will govern the operation and construction of public buildings in Campeche



10 new energy efficiency policies for buildings under development in Chile, Costa Rica, Guatemala and El Salvador



**12 new cities** joined the BEA platform thanks to GBC leadership



**19 GBCs involved: 6** leading active engagement and **13** supporting regional - local activities



+90 government officials actively contributed with cities/states perspectives



**+3,000 professionals** from multiple sectors trained by WorldGBC, GBCs and partners



**+100 partners** engaged in the working groups per country



**8 regional activities** with **over 20 cities/states** from all Latin America represented

## Lessons learned and next steps

### The key ingredients to our success we identified as:

- Strong, trust-based relationships with local government officials -"champions" - who believe in the cause and can give continuity to the project across administrations.
- Access to technical capacity and market intelligence.
- International alignment and momentum being part of an international network of cities helps to maintain momentum, despite any local challenges that may emerge.

### The work is far from complete. While we have made greater progress then expected, there is overwhelming interest from cities across Latin America for us to do more. The next steps in this project include:

- **Ensuring** that the policies currently under development are effectively adopted and implemented.
- **Advancing** cities/states mechanisms for reporting and verification to measure real time energy and carbon savings.
- Including new cities/states with ambitious net zero targets into the programme.
- **Drafting** national decarbonisation roadmaps for the building and construction sector in countries such as Colombia, where the work advanced under the BEA platform led to more policy activity in other cities in the country.

Achieving a net zero built environment can only become a reality through radical cross-sector collaboration, including all members of the value chain. At WorldGBC we know that the solutions to highly energy efficient, net zero buildings already exist, so it is our mission to accelerate and catalyse the movement for sustainable buildings for everyone, everywhere.

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## Accelerating building energy efficiency policies across Latin America

Colombia

BEA cities: Bogotá Cali Montería

Bogotá is the biggest city in Colombia and it's growing fast. The city's population of 8 million people is expected to become 11 million by 2030, and 13 million by 2050. This growth will double the number of households in the city - some 3 million by the middle of the century - and with this a far greater consumption of energy and water in those buildings if not future-proofed.

Cristina Gamboa CEO, World Green Building Council

Starting with Bogotá and later with the commitment of the cities of Montería and Cali, the Colombia GBC as part of the CCA project and BEA platform updated the National Energy and Water Efficiency Building Code 0549/2015 - Resolution 1874/2019 - to require all new buildings to achieve 20 percent energy savings and 30 percent water savings, starting in 2020. This new policy is projected to reduce emissions by improving the performance of 2.5 million homes that are expected to be built in the next thirty years.

## **The Pilot Project**

Two pilot projects are implementing Resolution 1874/2019, with parameters for green buildings guidelines and the implementation protocol for saving water and energy in buildings. The first project in downtown Bogotá is called "Triángulo de Fenicia".

The project is promoted by the University of los Andes, which is regarded as one of the best universities in the world. This hub for learning works in partnership with local authorities, which have close ties to the thriving campus. At the heart of the project is the mission to be "emblematic" with water and energy efficiency in buildings which are located in a beautiful, but deprived, area of the city. In other words, to become a symbol of innovation for efficiency.

Covering eight hectares of the city, with close to 120,000 square meters of new construction, the project focuses on reducing carbon emissions and saving water. It is leading by example in delivering green change within urban spaces. There is currently a study underway on the impact of the urban environment on efficient buildings, as well as generated inputs for integration with the city's eco-urbanism policy.



View the video of the project: https://youtu.be/IFrJ2HXBols

Measurement, Review and Verification online platform (MRV) - Electric energy consumption in residential buildings in Bogotá Bogotá's MRV was developed as one of the actions required of all BEA cities. Bogota established an information system that would allow the city to:



The main objective of Bogotá's MRV system is to generate geo-referenced data that can be used publicly and free of charge, and used to monitor, report and verify the impact of public policies on green building. These were aimed at reducing water, energy consumption, and overall GHG emissions from buildings in the city. This system contains measurements of actual water, electric power, and gas consumption for all typologies of use covered by Resolution 549 of 2015 in the city of Bogotá. To accomplish this, the system uses information collected from city databases and additional studies.

For the city of Bogotá, being part of the BEA project had several significant achievements such as the implementation of an effective regulation in sustainable construction that guarantees compliance with national standards on water and energy resource efficiency. Likewise, the information platform for water and energy indicators for the city was made available to the public. In the long term, this will allow us to evaluate the impact of the regulation and benefits that place the city as a leader in addressing the climatic emergency and the environment which will undoubtedly have an impact on the quality of life of the population.

Jaydy Milena Salazar Bogotá District Planning Secretary

## Montería Pilot Project

As part of the pilot project of the BEA project, an energy and water audit was conducted in 2019 for Centro Verde, the new headquarters of the city's mayor's office. The project seeks to decentralise the mayor's office services and bring them closer to the citizens who live on the other side of the Sinú River, providing commerce, connectivity, and wellness services.

The audit involved a review of the building's water and energy systems, taking into account the building's infrastructure and the different operation and maintenance practices. The objective of this review was to identify the aspects that were affecting the correct operation of the building in terms of energy and water efficiency, air quality, and comfort. A set of recommendations was provided and classified according to their level of intervention required (low, medium, and high).



Through the local representation of the GBCs, the collaborative work of the network and the understanding of the Latin American market needs and capacity, the WorldGBC CCA project, supported by the BEA platform, sets the baseline for sector awareness and education on the need for energy efficiency in buildings and established a policy track for its implementation. At the same time, it pushed the ambition for complying with a greater plan, looking towards the Sustainable Development Goals and the Paris Agreement targets. By leveraging its existing global WorldGBC Advancing Net Zero project, WorldGBC used the lessons learned from leading companies and cities committed to Net Zero targets today to create pathways from energy efficiency to a net-zero building for those cities which are just starting their journey.

As a result of these efforts, the Colombia Green Building Council (Consejo Colombiano de Construcción Sostenible, CCCS) began working with the Ministry of Environment and Sustainable Development, the Ministry of Housing and the National Planning Department of Colombia to design the new World Resource Institute (WRI) led "Net Zero Carbon Buildings for All project". As they receive additional funding and support, it is expected that they will pursue these targets between 2021 - 2023.





Viviana Valdivieso CEO, Colombia GBC Since its start in 2016 in Bogotá and reach in the cities of Cali and Montería, the BEA platform has had a deep impact in the discussions and actions that have taken place around Colombia's energy efficiency guidelines and opportunities in the building sector. Between 2019- 2020 with the support of P4G and the WorldGBC project, three energy codes were issued with a potential to reduce more than 7.7 million MTCO2 Eq. Additionally, the project has been a platform for collaboration, analysis and mobilisation of a deeper understanding and commitment of the private sector towards the country's energy efficiency goals - this has been a very important objective for us as an organisation. For our member companies, it has been an opportunity to have access to clear guidelines about cost-effective practices towards greater energy efficiency in different typologies and climate zones in the country.

# Main CCA project and BEA platform results in Colombia



Three cities joined the BEA platform in 2019 - Cali, Montería, and Bogotá - and updated and implemented the National Energy and water Efficiency Building Code for all new buildings. This is estimated to produce 20 percent energy savings and 30 percent water savings according to the building typology, in relation to Resolution 0549/2015.



A **Measurement, Reporting and Verification (MRV)** platform for Bogotá was put in place and can be accessed here.



A successful national dialogue to scale up the BEA project has taken place, which resulted in a government commitment to start structuring a **net-zero carbon roadmap** for buildings in alignment with the SDGs in 2021, with the support of the Colombia GBC (CCCS) and members of the BEA partnership.



**+20 technical workshops** have taken place for different stakeholders (public officials, private sector, academy, service providers, professionals, etc) to educate, explain and implement the policy and MRV, impacting **+480 individuals** across the industry.

# Mexico

### **BEA cities and states:**

- State of Campeche\*
- State of Yucatán\*
- Mexico City
- Sonora
- Jalisco
  - Quintana <u>Roo</u>

Starting 2019 with the Cities Climate Action project and the BEA Platform, SUMe (Mexico GBC) supported two new States to join the BEA in Mexico. First, the State of Campeche developed a 2021 public policy with mandatory guidelines that incorporate energy efficiency criteria in the operation, purchase, lease, and / or loan of state public buildings (offices, hospitals, schools, etc.). Campeche plans to lead by example, selecting the State's Place of Government as the pilot project to design and implement the Energy Management System.

This was followed by the political commitment of the State of Yucatán. Through the project, they developed a Technical Standard on Energy Efficiency in Buildings under Public Administration in 2020, and a case study to identify opportunities for introducing low-carbon technologies and high-efficiency refrigerants in buildings.

As a result of the multiple cities and states joining the BEA, and the leading example of state governments, SUMe continues to build on a national dialogue towards ambitious energy efficiency targets in Mexico. They receive strong support from critical organizations such as the National Commission for the Efficient Use of Energy, CONUEE and the Ministry of the Environment and Natural Resources, and SEMARNAT.

## **The Pilot Projects**

## **Campeche:**

In Campeche, the pilot project designed an energy management system for the Government Palace of the State of Campeche. The energy consumption reduction goal will be between 6 and 10 percent and began implementation in January 2021.

The Energy Management System of the Government Palace of the state of Campeche, which was signed by the Governor of the State in march 2021, will be an icon for other governments and sectors. With this project it has been demonstrated that with good operating practices, it is possible to achieve significant energy savings, which will save 6 percent of the building's energy consumption each year (44,880 kWh / year) and avoid emitting nearly 23 tons of carbon dioxide equivalent annually. Establishing this system in the building where the executive branch of government operates demonstrates the authorities commitment to energy efficiency in buildings as a cost-effective way to combat climate change.

## Yucatán:

In January 2020, the government of the state of Yucatán published the "Technical Standard: Energy Efficiency and Comfort Criteria for Public Buildings". It applies for the operation, construction, purchase and lease of the more than 2,900 public buildings in the state. The standard establishes a goal of reducing the energy consumption by 5 percent during the first year. Through this commitment, the benefits of energy efficiency in buildings will be demonstrated through the environmental aspects with the reduction of emissions, improved quality of life with more comfortable and healthier spaces for work, and economic savings.



As the government of Yucatán, we consider this project to be a turningpoint that helps us understand that the agreements are not only environmental commitments, but commitments to change paradigms and sustainability.

#### Sayda Melina Rodríguez

Secretary of Sustainable Development of Yucatán



For Campeche it is a great commitment to take on the challenge of implementing both a public policy and an energy efficiency pilot project from the highest levels of government. We have a lot of responsibility to meet the expectations and reduction objectives, both environmental and financial. This is a great opportunity because these actions position Campeche as the spearhead, not only in Mexico, but across the region.

#### **Roberto Hernández**

Undersecretary of Sustainable Energy Development of the Government of the State of Campeche (Sedesu)



The results from the project will include the creation of a new environmental energy culture across the States public servants. From spaces that are more comfortable to work in, we will go through a paradigm shift where each one does their bit to make changes at different scales.

#### Juan Carlos Vega Milke

Undersecretary of Energy of the Ministry of Economic Development and Labor of the state of Yucatán (SEFOET)



# CCA project and BEA platform results in Mexico



**8 cities and states** are working with the **CCA project and BEA platform** with the support and leadership of local partners including WRI Mexico and SUMe (Mexico GBC)



In Mexico, **the states of Yucatán and Campeche finalised the design parameters**, **measurements, and energy reduction goals** of the mandatory Guidelines and the Technical Standard for all public buildings for compliance starting in 2021.



State of Yucatán policy: **"Complimentary Technical Standard on Energy Efficiency in Buildings of the Public Administration for Yucatán State"** (Norma Técnica Complementaria sobre la Eficiencia Energética en las Edificaciones de la Administración Pública del Estado de Yucatán, March 2021).



State of Campeche policy: **"Guidelines in Energy Efficiency Criteria for the Public Administration Buildings of the Campeche Public Administration"** March 2021.



# Central and South America

CCA Project and BEA platform participating cities per country:

- Costa Rica Belén, Moravia, Santana and Curridabat
- El Salvador San Salvador
- Guatemala Guatemala City
- Chile Municipality of Santiago

Throughout Central America, the CCA project and BEA platform has supported efforts in Guatemala, El Salvador and Costa Rica, where a hub of municipalities shared best practice, technical efforts, the assessment of energy savings and other resources with platforms and tools.

This includes the "Building Efficiency Targeting Tool for Energy Retrofits" (BETTER) via a Cooperative Research and Development Agreement between Lawrence Berkeley National Laboratory and Johnson Controls, with support from the International Finance Corporation, ICF. This partnership provided technical and strategic tools to design and implement building efficiency measures to over twelve committed cities and states.

## Guatemala

Guatemala GBC contributed to facilitating financial incentives for sustainable buildings by establishing relationships with private banks to present a Sustainable Priority Housing project that generates financial products to encourage the construction of sustainable priority housing.

The GGBC provides the municipality with technical support to the criteria of responsibility and sustainability. This will be incorporated and / or applied to policies for the sustainable construction of projects of various uses and scales.

The GGBC is a facilitator to agree municipal sustainable construction policies with the private sector, as well as allowing municipal officials to access specialised knowledge of international entities. This process in turn transfers knowledge of similar local and international experiences that successfully promote sustainable urban development.

Arch. Eva Campos Head of the Housing and Management, Urban Planning Directorate, Municipality of Guatemala

# Costa Rica

Costa Rica GBC organised a "City Cluster" supported by the BEA in 2019, which developed and implemented codes and standards to support the City Masterplan that is currently under review. In order to create building portfolios and a locallypertinent baseline that applies for all four municipalities, as well as other locations in the Great Metropolitan Area (GAM), collection of data and inclusion in the BETTER tool is expected. This will enable them to progress on defined priorities, pilot projects and measurements. Costa Rica GBC continues to recruit more municipalities to join the program and replicate the existing model.

In Curridabat, we believe that BEA is a fundamental part of the strategy that we have been using. The main challenge is to be able to approve the new version of the Regulatory Plan and expand it to all districts, so that we can have a solid tool that allows us to modify regulations and incorporate good practices as we verify them. We also need it to continue the development of public works, which incorporate best practices of good lighting, natural ventilation, water treatment and improvement of our network of public spaces.

#### **Jimmy Cruz Jiménez**

Costa Rica, Mayor of the Municipality of Curridabat

As the creator of the 'City Cluster' of four municipalities in the BEA - Costa Rica program, the GBCCR envisions, in collaboration with the World Green Building Council, an excellent opportunity for GBCs to make valuable contributions to local governments through "peer-to-peer learning" that the GBC network facilitates between municipalities. Likewise, the work in the definition of policies and the management of public-private alliances will generate great benefits for the citizens of these municipalities and eventually the country, since our aspiration has always been to replicate and scale the achievements and experiences of BEA.

#### Nicolás Ramírez Larraín

Executive Director, Green Building Council Costa Rica (GBCCR)



# **El Salvador**

El Salvador GBC is working with the municipality of San Salvador, which seeks to improve its energy policy and the version of the HAUS (Sustainable Urban Habitats) standard implemented by OPAMSS. The financial sector, after the signing of the sustainability pact in 2019 made up of 12 national and international banks, is interested in participating in programmes that promote efficiency in buildings, with the commitment to create facilities for sustainability projects.

Let us go beyond conviction with action. Let's work towards a metropolitan area of San Salvador that is more viable, livable and equitable, and prioritises sustainability and resilience.

Arch. Yolanda Bichara Executive Director OPAMSS



# Chile

By the end of 2020, the project welcomed the municipality of Santiago to join the commitments and efforts of the BEA, through the Sub Directorate of Planning and Sustainability, and with the support of the Investment Analysis Unit of the Seremi RM of the Ministry of Social Development and Family.

With Chile Green Building Council as a local ally and the expert support of our partner companies and organizations, the organization is supporting the Municipality of Santiago in the development, management and implementation of better sustainability policies in construction. Some of these measures could generate 5.8 billion tons of CO2 emission savings by 2050.

In the first phase of the project, through workshops, technical committees and consultations, the initial results indicate that for the Municipality the topics of interest transcend energy efficiency, addressing other thematic aspects of sustainable development such as: circular economy and carbon management with a life cycle approach, certification systems, health and habitability, water efficiency and training of professionals and civil society.







The Collaboration Agreement signed with the Building Efficiency Accelerator is of great relevance for the Municipality of Santiago, since it allows access to strategic alliances to advance in the implementation of local policies, aimed at reducing carbon emissions in the city in the medium term

Santiago has set itself the objective of being an increasingly sustainable and efficient city in the use of its resources, for this, specializing its professionals, learning from successful experiences and accessing sources of financing in the field of energy, will allow progress in improving the energy efficiency indicators of the city and comply with the carbon neutrality commitments signed.

This Agreement will allow to focus efforts to improve the energy performance of municipal buildings, including education and health services, public lighting, energy diversification and also to generate a higher level of awareness in community businesses, especially real estate, since Santiago is one of the communes that have led in recent years the supply of new homes.

#### Paola Escobar Marchant

Subdirectorate Director of Planning and Sustainability, Communal Planning Secretariat













# **Our Partners**

Grant



### **BEA platform coordinator**



WORLD Resources Institute



