

# SUSTAINABLE BUILDING AND ACCESSIBILITY

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In 1987 the United Nations World Commission on Environment and Development, with the participation of several countries and led by Dr. Gro Harlem Brundtland, who was the Prime Minister of Norway, elaborates the report Our Common Future, better known as the Brundtland Report.

**T**his is the first time that the term sustainable development or maintainable development is used, defined as the one that “satisfies the needs of the present without compromising the needs of future generations”, confronting and contrasting the position of the economic development with that of environmental sustainability, recognizing that social advancement was taking place at a very high environmental cost (global warming, depletion of the ozone layer, degradation and deforestation of forests, among others). In this way, it is brought to the table the idea that a change should be generated in terms of the scope of sustainability, considering the economic and social context of the environment, that is to say that economic growth and environmental protection must be addressed as a single issue.

Subsequently, several important meetings were carried out such as the Earth Summit in Rio de Janeiro in 1992, whose principle No. 1 states that “human beings are at the center of concerns related to sustainable development. They have the right to a healthy and productive life in harmony with nature”; the Rio de Janeiro Conference on Sustainable Development in 2012, where the document *The Future We Want* is issued, which contains clear and practical measures for the implementation of sustainable development, and the process for developing Sustainable Development Goals (SDGs) is initiated, based on the Millennium Development Goals; and the Sustainable Development Summit, in 2015, approving the 2030 Agenda, which defines 17 sustainable development goals that are universally applicable and 169 targets by 2030. This Agenda has three main objectives: to end extreme poverty, to combat inequality and injustice and tackle climate change; and integrates the three main aspects of sustainable development that are environmental, economic and social. In 2015 two other very important agreements were given for climate change: the Paris Agreement approved at the Climate Change Conference COP 21 and the Sendai Framework, signed in Japan in March 2015.

Going back to the 2030 Agenda, we have Goal 11: “Make cities and human settlements inclusive, safe, resilient and sustainable”, which is very important if we consider the United Nations projection that by 2050, 75% of the population will live in the cities. It should be considered that the construction sector has a great responsibility with regard to climate change, since, according to the *Fifth Assessment Report on Climate Change (2014)* of the Intergovernmental Panel on Climate Change (IPCC), in 2010 the world’s buildings accounted for 32% of global energy final consumption and 19% of all greenhouse gas emissions. And the most serious thing is that, according to forecasts, the use of energy

General view of the Centro Metropolitano de Convenciones de Quito, first building in be certified in accessibility in Ecuador (photo courtesy of the author)

in buildings around the world could double or even triple by 2050. So it becomes urgent the use of strategies to mitigate this concern, looking for the greatest possible energy savings or even “zero energy”.

Therefore, when talking about sustainable building, the big goal is energy savings (electricity, water and materials) and the reduction of carbon emissions. To do so there are several certification systems that measure the fulfillment of these objectives; they are, mainly, LEED of the US Green Building Council (USGBC), EDGE of the International Finance Corporation (IFC), member of the World Bank Group, BREEAM of the Building Research Establishment (BRE) or WELL, managed by the International WELL Building Institute (WBI). If the savings and system requirements chosen are accomplished, certification is obtained. But is this enough to have a sustainable building? What happens if a person with reduced mobility, with disabilities, with functional diversity, cannot enter the building or cannot make use of their facilities or services with comfort and security? That is why it is very important to consider accessibility and universal design as requirements for having a sustainable building.

As I mentioned in a previous article in NUMBERS, “universal accessibility is a public good through which every person, regardless of gender, age, ethnicity, physical, psychic and/or sensory condition, has the right to interact socially and develop their skills, abilities and potential in their daily lives, making use of and enjoying autonomously the services available in the community; especially if they are a disabled person or with reduced mobility”.

Therefore, the objective of universal accessibility is to enjoy a fully accessible building by eliminating the barriers that impede personal autonomy and mobility, and even better if through universal design, from the beginning, a fully accessible building is designed in which no further adaptations or specialized design are necessary, but it goes unnoticed in such a way that it is felt when using the infrastructure and services. Then we can talk about a building being sustainable, because both the great environmental goal of combating climate change and inclusive development where no one is left behind are considered, where proper design enables.

**CCMQ, PIONEER IN ECUADOR AND LATIN AMERICA**  
The Global Universal Design Commission, Inc. (GUDC), institution that I represent in Ecuador, is a nonprofit corporation created in 2008 under the laws of the State of New York, USA, to disseminate knowledge about the use of universal design in the development of buildings, products and environments to be used by all people, in order to achieve accessibility in the building. It has developed the Universal Design Standards for Public Use

of Buildings, seeking its adoption and application in public and private buildings of institutional and commercial use, as well as certification of compliance with standards. And, for the first time in Ecuador and Latin America, we have granted the certification of the new Metropolitan Convention Center of Quito (CCMQ, by its acronym in Spanish) as a contribution of the GUDC to the city of Quito through the Metropolitan Public Company of Tourist Destination *Quito Turismo*, since the honorary president of the GUDC is the Ambassador Luis Gallegos, which is why there is a very special interest for our country. The certification of this iconic building is carried out in three categories: infrastructure, in which the plant of the building is certified, whose construction has been under the direction of the Ecuadorian Council of Sustainable Edification and the company Ekron Construcciones; public space, in which the parking spaces and the main entry are certified, done by the Metropolitan Company of Mobility and Public Works (EPMMOP); and equipment, which will be certified when the operator of the CCMQ is contracted.

The CCMQ is part of the policy for the attraction of tourism of conventions and will become one of the most important buildings of Quito, with a wide infrastructure to organize conventions and institutional, cultural and artistic events, and which today people of all ages, conditions and capacities will be able to attend, since its physical infrastructure offers the facilities so that all this population can enjoy the services and events that are carried out in a comfortable and safe way. The first category of infrastructure has been successfully certified, since the revision of the architectural plans as well as the construction inspection was carried out, and Ekron Construcciones applied the recommendations given. Among the main ones are the fulfillment of the Ecuadorian regulation of accessibility to the physical environment defined by INEN, the Ecuadorian Construction-Universal Accessibility Code NEC-HS-AU and the standards of the GUDC in the entrances and exits of the site, in the vertical and horizontal circulation, considering surfaces, stairs, elevators and ramps, and in the elements of the building like bathrooms, doors, windows and especially the auditorium, in which all the exhibitors, including a wheelchair user, have private access from the internal parking lot to a mezzanine that has a private accessible room and bathroom before entering the stage; it also has an emergency exit accessible from the auditorium to the Bicentenary Park. ■

**Universal accessibility is filled with details: a couple of centimeters of elevation can become a major obstacle to the autonomous mobility of a wheelchair user, or it could become dangerous for an elderly person to stumble or even fall; also, the use of colors and the proper contrast can be very useful for people with low vision**