

Improving Accessibility and Usability in the Built Environment. Case Study: Guide Lines by the Lombardy Region, Italy

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Abstract. Accessibility of the built environment, including open spaces, products and services, is essential for people with disabilities and people with special needs such as the elderly and children to access, move, use and enjoy the services and the urban spaces, exercise their rights and fully participate in social life. Local administrations can, and must, identify strategies and tools that are useful for achieving this goal, with effectiveness, efficiency and satisfaction. The case study of the "Lombardy Region Guidelines for Accessibility Plans" that each Municipality of the Region is required to draw up and implement will be illustrated. The Guidelines were drawn up in a very short time, promoting a participatory method, involving decision makers and stakeholders since the very beginning, and providing indications for building up Accessibility for All, inclusive and non-discriminatory. The founding concept was that of a City for All or of a "Plan for the accessibility and usability of the built environment, social inclusion and environmental well-being". Considering the different characteristics, abilities, needs, conditions and preferences of people, this concept extends the recipients of the Plan to all citizens, as well as to occasional visitors such as tourists. They were approved by the Regional Council in November 2021. The approach adopted complied with the most recent normative, legislative and cultural indications, both national and international. Training courses have been scheduled for municipal officials, technicians and plan editors. Synergies have been established with universities and UNI, the Italian standardization body.

Keywords. Accessibility, usability, built environment, regional policies

1. Introduction

Accessibility of the built environment, including open spaces, products and services, is essential for people with disabilities and a large segment of the population, including the elderly, to access, move and enjoy the services and public space of the city, to access transport, leisure and cultural facilities, in safety and autonomy, exercise their rights, and fully participate in social life

As highlighted in the United Nations Convention on the Rights of Persons with Disabilities (UN CRPD), implemented by the Italian State with Law 18/2009, the environmental and spatial factor is considered among the essential elements capable of

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positively influencing, or on the contrary hinder / impair the execution of the most important daily functions such as living, moving, relating, communicating, getting information, working, studying, having fun.

The presence of barriers or facilitators can heavily prevent or favor the participation in the social life of citizens and therefore their well-being in a broad sense. Already during Alma Ata works in September 1978, the World Health Organization recognized that health is not referable to merely functional facts, as it is not identified with the pure and simple absence of disease, but with the whole psychophysical well-being. The same definition of "disability" of the UN Convention assumes, as a reference principle, the health condition of the person in interaction with the environment. It also requires not only accessibility to the built environment, but also to information, communication and transport.

Local administrations can, and must, identify strategies and tools that are useful for achieving this goal, with effectiveness, efficiency and satisfaction.

With reference to the national and regional obligation of drafting Architectural barriers elimination Plans in public buildings and urban spaces (Law 41/1986, 32.21; Law 104/1992, 24.9; Lombardy Region Law 6/1989, as amended by Lombardy Region Law 14/2020) and to the support measures for municipalities with population up to 5,000 inhabitants (regional resolution 4139 of 21/12/2020), the Lombardy Region took the opportunity to draw up innovative Guidelines, which contain the most recent principles introduced by the UN Convention for the Rights of Persons with Disabilities, taking the approach and the tools of Universal Design / Design for All, as required also by the European Union, and by the very recent regulatory instruments developed following some EU mandates.

Also the European Disability Strategy 2010-2020 (and the most recent 2021-2030) has implemented the legal requirements of the UN Convention in the EU Directives, in the Accessibility Act for products and services and in the standardization of accessibility, with the so-called "Design for All ". Through the "mandates", called "standardization requests", the European Commission requested the European standardization bodies (ESOs) to develop and adopt standards in support of European policies and legislation. The directives of the European Union and the UN guidelines in the field of accessibility and social sustainability, integrated with environmental sustainability policies, have been incorporated as new essential references, for the drafting of the Lombardy Region Guidelines for Plans for Accessibility in 2021[1], plans that each Municipality of the Region is required to draw up and implement on the basis of Italian law.

2. Method

These Guidelines have been drafted after research of the state of the art and tools to achieve an inclusive and accessible design of the built environment [2], [3], [4], [5], [6].

Their cultural approach is to consider the city as a system, and every factor that can promote environmental well-being, social participation, the beauty and vitality of the territories, with all possible users, both citizens and occasional visitors. The goal is to overcome the simple concept of eliminating a set of barriers and problematic elements for some categories of people, by adopting a systemic approach, which involves all the actors, decision makers and stakeholders, from the very beginning of the process, as well as the national technical legislation in force.

2.1 Recent legislative and regulatory references.

With reference to the national and regional obligation to draft plans for the elimination of architectural barriers in public buildings and urban spaces (Law 41/1986 art.32.21; Law 104/1992, art.24.9; Regional Law 6/1989, as amended from LR 14/2020), the Lombardy Region has made € 1,000,000 available to promote the drafting of the "PEBA - Plans for the Elimination of Architectural Barriers" in Municipalities with a population of less than 5,000 inhabitants (regional resolution 4139 of 21 / 12/2020).

The Region therefore took the opportunity to draw up innovative guidelines for all its municipalities, which contain the principles most recently introduced by the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), adopting the approach and tools of the Universal Design / Design for All (UD/DfA), as required also by the European Union, and by the very recent regulatory instruments developed following some EU mandates to European standardization bodies.

These European mandates have produced, with a long participatory process (with more than 50 representatives of various Bodies), some innovative and shared rules at European level, on the subject of accessibility and Design for All. Among these:

- The EN 17161 standard "Design for All - Accessibility following a Design for All approach in products, goods and services - Extending the range of users"[7] to include Design for All in all relevant standardization initiatives of member countries (EU M473 / 2010);
- The European standard EN 17210 "Accessibility and usability of the built environment - Functional requirements"[8]: to provide the performance requirements (without dimensions), to be used as technical specifications or criteria for the award of public contracts (with reference to the Directives on procurement public spaces, but not limited to), of spaces, buildings, structures and transport. It is accompanied by two Technical Reports, one with some minimum dimensional requirements, to support each functional requirement, and one with the indications and format for the declaration and certification of conformity: CEN / TR 17621 "Accessibility and usability of the built environment. Technical requirements"[9], and CEN / TR 17622 "Accessibility and usability of the built environment - Conformity assessment"[10]. (EU M420 / 2008).

The main reference standard was ISO 21542:2011 "Accessibility and usability of the built environment". Its updated version was drafted with the participation of some members of the Project Team of the second phase of the M / 420 selected by a specific call for experts in 2016, including Isabella T. Steffan, in order to make these rules as consistent as possible. All these documents have been received by many standardization bodies, including UNI, the Italian standardization body, and published in 2021.

The requirements of these standards represent a very useful methodological and planning framework for going beyond the now obsolete approach of the national and regional legislation in force. UNI CEI EN 17210: 2021, consulted in parallel with the relative TR1, can be a fundamental resource because it provides the basic performance and dimensional requirements in terms of accessibility and usability, on the different elements and types of buildings, such as roads, parking lots, orientation system, bathrooms, schools, museums.

The Lombardy Region in the drafting of the Guidelines has adopted the aforementioned documents, thus implementing the path indicated by the EU.

2.2 Fundamental concepts of the Guidelines

The key concepts of the Guidelines recommend the drafting of Plans for: A city for all including occasional visitors, accessible, usable and inclusive; an environmental sustainability integrated with social sustainability; and to relaunch the attractiveness of the territories and promote their economy and tourism.

i) The first key concept is that of a "Plan for the accessibility and usability of the built environment, social inclusion and environmental well-being", with the aim of creating a City for All. Thinking about building an accessible and inclusive city does not only represent an intervention aimed at improving the quality of life and social integration of a specific social group (people with disabilities, children, young people, adults and the elderly) but it also means improving and facilitating the quality of life of the whole community (people with strollers, the elderly who see their visual / auditory perception or agility progressively diminish, people with environmental allergies, obese people, all those who live temporarily in situations of reduced mobility, pregnant women), in particular with a view to a territory called to host the Olympic and Paralympic Winter Games in 2026. Considering the different characteristics, abilities, needs, conditions and preferences of people, this concept extends the recipients of the Plan to all citizens, as well as to occasional visitors and tourists.

It is recommended to move away from the uniqueness and rigidity of design solutions based on references that are not sufficient to guarantee a city liveable by all, independently and safely and to propose multimodal and multichannel solutions, i.e. different alternatives and responses to the multiple needs of people at access and use of the built environment, communication and information

ii) The second key concept is that of a Plan for environmental sustainability integrated with social sustainability, with the aim of generating vital, welcoming, safe public spaces, soft and usable mobility networks; improve performance, health, well-being, satisfaction, participation of as many people as possible.

The UN Convention (UNCRPD) emphasizes the importance of integrating disability issues as an integral part of sustainable development strategies. The European Consensus on Development, a project to align Union development policy with the 2030 Global Agenda for Sustainable Development, reaffirms the EU's commitment to a human rights-based approach to development and to rights of persons with disabilities. In particular, the Sustainable Development Goal SDG 11 - Making cities and human settlements inclusive, safe, long-lasting and sustainable expresses how it is necessary to "guarantee everyone access to a safe, convenient, accessible and sustainable transport system, improving the safety of roads, especially by enhancing public transport, with particular attention to the needs of those who are most vulnerable, women, children, people with disabilities and the elderly" and "to enhance inclusive and sustainable urbanization, plan and manage a human settlement that is participatory, integrated and sustainable". The integration of UD/DfA in the procurement, design, construction, management and use of the built environment contributes to sustainability, providing buildings and spaces that are accessible and usable by all, but also easily adaptable for future use and the different and changing needs of users.

Designing for the entire human life cycle promotes social inclusion and cohesion: the functionality of an accessible built environment is more flexible and the infrastructure is more sustainable as there is less need for costly adaptations at a later stage than they can be costly in economic and environmental terms.

iii) The third key concept is that of a Plan as an opportunity to promote the beauty of Lombardy's cities, with the aim of relaunching tourist attractiveness and the economy. The accessibility of the built environment must be considered as a system, not just as a sum of individual elements. To ensure a safe, accessible and usable urban system, it is important to develop urban planning tools and promote the design of new urban areas and routes, the redesign and good maintenance of existing ones. Accessible tourism can be a lever to reactivate local development processes in internal and marginal areas of our country, and to raise the quality of living.

The dimension of accessibility, usability and well-being all refer to the living space, which is the city par excellence, or the public space, a place for relationships and participation, a place of identity and a place of community recognition. Accessibility Plans require specific attention and adequate resources from public administrations also because these plans represent an investment and a wealth for the area capable of producing efficiency and functioning for citizens, and tourists /occasional visitors.

2.3 Structuring of the Process

The development of the Plan was conceived as an opportunity to be seized to structure two permanent tools within each municipality, one dedicated to community consultation and participation and the other to coordination and technical support.

These tools are functional to accompany all the stages of elaboration of the Plan, and subsequently, they are configured as tools that continue to act over time for monitoring the Plan and for the promotion of policies and projects in an accessible and inclusive key. The two tools have been identified as follows:

- Scope/framework of the permanent consultation on city accessibility: place of listening, proposal, participation and sharing of all the actors and stakeholders (configurable for example in an Observatory, a city Council);
- Coordination scope/framework and technical reference for accessibility: internal technical reference tool of the Municipality to support the elaboration of the Plan and to disseminate accessible-inclusive projects and policies in all the Departments (it may include, for example, an internal managerial figure to the Municipality, possibly flanked by a more technical figure).

Analysing some good practices of pathways that have guided Accessible Planning at the same time as the development of the Plan (e.g. in Reggio Emilia and Crema), the Guidelines require the promotion of actions, projects and work tables that concretely aim at supporting and revitalizing the path towards an accessible and inclusive city, such as:

- promotion of awareness and information initiatives for citizens and administration decision-makers on accessibility issues;
- training of technicians and designers to aim at the qualification of projects in terms of accessibility and UD/DfA as well as the effective application of the legislation;
- direct the municipal calls for the design of spaces, goods and services towards planning and solutions in terms of accessibility and UD/DfA;
- update of the Building Regulations to include the discipline of accessibility with the UD/DfA approach and the principles of Accessible and Inclusive Design;

- promote projects to facilitate the accessibility of shops and commercial activities in the city;
- promote initiatives for a tourist reception accessible to all people with motor, sensory and intellectual disabilities and with specific needs (elderly people, families with small children, etc);
- promote soft mobility, walking, cycling and public transport

The systematic implementation of all these actions, from the very beginning of the Plan development, promotes multiple direct and indirect objectives. Among these is the involvement of different areas and subjects of the community and bringing to life concrete and pragmatic actions.

2.4 Features and methodology of the Plan

These guidelines do not contain technical prescriptions, minimum or standard dimensions but are performance-oriented, that is, they provide indications on the methodology and on the useful process for starting and structuring the so-called PEBA.

The methodological indications and characteristics identified by the guidelines for the development of the Plan for accessibility, usability, inclusion and environmental well-being are summarized as follows:.

- Plan for an accessible, usable and inclusive environment. It is recommended to implement the UD/DfA approach indicated by the UN and the European Union respectively.
- Plan shared and participated with the community and citizens. This involves the active involvement of the representatives of the stakeholders (stakeholders / community holders) in the main phases of the processing process
- Interdisciplinary and integrated plan. The issue of accessibility cannot be treated only at the building scale, it is necessary that the adaptation operations of the individual spaces are framed within a planned process, as components of a coherent and larger-scale strategy. The Plan must be coordinated with the other instruments and plans of the city (eg. Territorial government plan, maintenance plan, urban plan for sustainable mobility, urban furniture plan, etc.)
- Digitized, dynamic and upgradable, monitored plan. A digitized (and geo-referenced) plan configures a fundamental tool both in the detection of barriers and in the planning, management and monitoring of interventions.

2.5 The articulation of the Plan into phases

To facilitate the drafting of the Plan, the guidelines present an articulation in phases of the processing process, which develops from the preliminary phase to the definition of strategies and objectives, to the analysis of the critical issues carried out at the same time as the identification of design solutions. The last two phases are focused on the elaboration of the Plan and the planning of priorities and ends with the presentation of the Plan to the citizens (Figure 1).

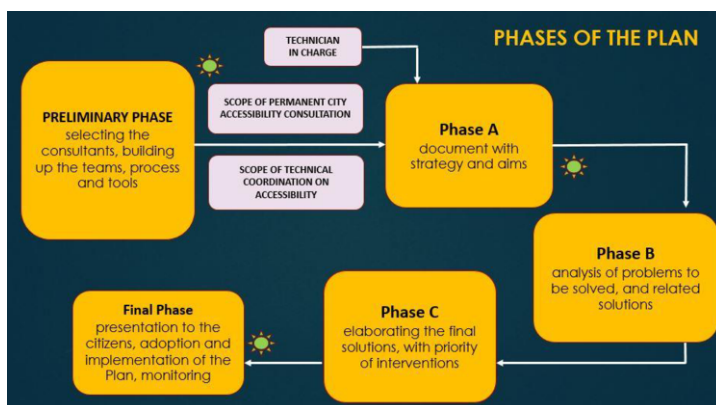


Figure 1. Phases of the Plan of Accessibility

3. Results

The Lombardy Region Guidelines simply suggest the tools, they represent an example of a methodological support to accompany the Municipalities in the preparation and adoption of Accessibility Plans, that can be replicated in other regions.

These Plans can integrate general urban planning tools (such as the PGU - Territory Government Plans and the PUT- Urban Traffic Plan) so that the issues of accessibility for all take on a strategic role.

They also contribute to spreading the culture and skills necessary for the preparation of tools for a city accessible to all, according to the most recent national and international regulatory, legislative and cultural indications.

They promote a participatory method, which involves decision makers and stakeholders, from the very beginning of the process, and provide indications / strategies to build Accessibility for All.

The Guidelines were drawn up and approved in a very short time, in 2021, following the establishment by the Lombardy Region of the Regional Electronic Register of PEBAs and the related change in LR 6/89.

Two webinars have already been held for technicians / designers, officials and decision-makers of municipalities and local authorities, in December 2021. The second training phase was scheduled for 2022; synergies are envisaged with some universities and the Italian standardization body.

4. Conclusion

To start an effective and solid path aimed at urban accessibility, it is necessary to provide supra-municipal indications on actions, tools and methods, such as those for the elaboration of a Plan of accessibility and usability of the built environment, social inclusion and environmental well-being and its implementation over time. It is first of all necessary to organize the process and structure the appropriate and dedicated working tools, to share strategies, objectives and actions with all the players.

Municipalities are invited to overcome approaches and solutions exclusively dedicated to people with disabilities, to identify solutions that are more able to respond to the different needs of access and use of spaces, services and collective equipment, supporting the ability of each to perform independently daily life and work activities. Considering the different characteristics, abilities, needs, conditions and preferences of people, the recipients of the Plan extend to all citizens, as well as to tourists.

It is a question of planning and managing an open space or a built environment with the broadest and most inclusive vision possible, guaranteeing personal mobility and networks of paths that can be used in safety and autonomy, by the greatest number of people possible, which connect the places of greater interest and attractiveness, services for the citizen and the occasional visitor, also in collaboration with other Municipalities, putting the various interventions into a system and indicating the priority ones. With this approach there will also be benefits in the prevention and resolution of public emergency situations deriving from events or disasters. The aim is to improve the quality of the architectural and urban planning project and consequently that of everyone's life.

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