

Transforming our World through Universal Design for Human Development

*Proceedings of the Sixth International Conference
on Universal Design (UD2022)*



Editors: Ilaria Garofolo
Giulia Bencini
Alberto Arenghi



IOS Press

The City of Lecce (ITA) Accessibility Plan. The Innovative Experience of the Municipal Accessibility Lab

Francesca RAIMONDI^a, Monica BERCIGLI^{b,1}, Dora URICCHIO^b, Giuseppe GABALLO^c

^a *Unisalento – Department of Engineering for Innovation*

^b *Unifi – Department of Architecture*

^c *Unisalento – Department of History, Society and Human Studies*

Abstract. This article presents the first main outcomes of the innovative experience of the Municipal Accessibility Lab of Lecce, a technical-administrative structure established for guiding the implementation of the Accessibility Plan of the city. In order to make Lecce an accessible, comfortable and safe city, the research activities of the Accessibility Lab focus on interdisciplinarity and citizen participation, thus becomes an opportunity for a generalized improvement of life in the city, an experience of knowledge and socialization to help create a more aware and fair community.

Keywords. Lecce Accessibility Plan, Accessibility, Urban and Architectural Barriers, Community engagement, Inclusion.

1. Introduction²

It is now widely understood that the application of rules (albeit insufficient) and some specialized skills are not enough to create inclusive, safe and comfortable habitats; Sensitivity towards “welcoming city” models is also maturing in Italy, which can only be implemented through interdisciplinary planning and design, as an approach that can better respect the multifactorial and dynamic complexity of the intervention. It starts from the principle according to which the elaboration of an Accessibility Plan necessarily implies a social dimension which concerns the experience, habits and perspectives of those representing the main target of urban intervention: the “stakeholders”, i.e., disadvantaged people (people with disabilities, the elderly, children, migrants, etc.) and their caregivers. Furthermore, the concept of accessibility [1] [2] [3] implies the principle according to which all the transformation interventions involving the urban fabric must also have a positive impact on all its residents and on the various social categories

¹ Corresponding author, Monica Bercigli, Department of Architecture, University of Florence, Via della Mattonaia, 8 - Firenze; E-mail: monica.bercigli@unifi.it

² Dott. Giuseppe Gaballo is the author of paragraph 1, Arch. Francesca Raimondi is the author of paragraph 2. Arch. Monica Bercigli is the author of paragraph 3 and Arch. Dora Uricchio is the author of paragraphs 4 e 5.

“using” the city: commuters and city users, tourists, freelancers working in construction and urban planning, etc.

The new approach of Accessibility to urban spaces is a consequence of the fact that nowadays the complexity, richness and poverty of urban fabrics are no longer subject to planning for economic purposes, nor are they dependent from slogans such as *smart* and *sustainable*; to adequately understand and conveniently act on the city, the need for a new approach is therefore required, starting from the urban, understood as the lived experience of its inhabitants. Intervening only on the technical and regulatory aspects means believing that the social reality of the city can be transferred through mappings and percentages, without providing any insights into what people experience, think and feel.

The Municipality of Lecce (Italy) has launched a series of actions aimed at drafting an Accessibility Plan, i.e., an innovative programming tool, already tested in other Italian contexts, aimed at enhancing the PEBA conceptual and methodological evolution. The Municipality of Lecce has established a technical-administrative structure³ for guiding the implementation of a Plan – the “Accessibility Lab” – and entrusted the drafting of the Plan to four researchers through the assignment of research grants by University of Florence and the University of Salento.

Drawing on the new approach to Accessibility, it was deemed necessary to integrate the activities of the Laboratory with a sociological research-intervention, aimed at detecting an exhaustive framework of needs relating to the different social categories that live in the city. The sociological activity envisaged three interconnected phases [4], useful for bringing out the social complexity of urban life in Lecce and for strengthening the link and dialogue between institutions and users. Some preliminary inspections were carried out which allowed the acquisition of information necessary for the elaboration of a general cognitive framework through a comparison between direct observational data and the analysis of socio-demographic and economic data. Two short questionnaires have been prepared for the detection of needs and requirements related to the lifestyle and experience of residents and users of the city, thus creating an important tool for the spontaneous reception of reports from users: the Accessibility Information Desk. For the creation of the requirement framework, the third most important phase involved the team in building a constant network of relationships with the numerous associations committed to improving the quality of life of the most disadvantaged categories in terms of accessibility to spaces, places, goods, and services; the following step resulted in the construction of a Permanent Working Group, made up of associations and cooperatives, foundations, trade unions, trade associations and public institutions.

The Laboratory also developed a detailed Communication Plan which better defines some aspects of the (internal/external) communication and organization of Lecce, and specifies the important link between the organization of the deskwork and user-oriented communication.

³ Prof. Antonio Lauria, Coordinator of the Accessibility Plan draft and responsible for the Research Activity; Ing. Giovanni Puce, Director of Public Works and Coordinator of the Municipal Laboratory for Accessibility; Sonia Cappello, Sole Responsible for the Procedure.

2. Methodology

The methodology of the Accessibility Plan, intended as “operational program aimed at improving the accessibility rate of venues, collective services and goods through a range of coherent actions and measures planned on the basis of shared priorities” [1]. It is developed, in the middle-term period, according to five phases: Operational framework setting, Knowledge phase, Planning phase, Design phase, Monitoring phase.

The research path has been conceived as inductive learning process that, starting from the specific case of a Pilot Area, aims at define Guidelines, principles, procedures and tools of a methodology progressively applicable to the rest of the municipal territory.

Due to the complexity of the urban and social dynamics, the development of the Accessibility Plan, in order to become fully effective, required precise goals and a well-defined operational structure based on programming tools that are able to direct the entire process and to provide a link with the existing planning procedures. For this reason, in addition to the Communication Plan, the Operational Program and the Management and Monitoring Plan, have been set up.

2.1. The Knowledge Phase: definition of the Pilot Area and general features

The Pilot Area, portion of the city chosen as case-study being representative of all the urban and social scenarios, allows to carry on the research phases in a short time and to define an updated and credible cognitive framework thanks to which it is possible to plan in a informed and efficient way, allocate specific sums to plan and carry out the construction works, to keep track of the Interventions carried out and to monitor the results. The Pilot Area, approved by the City Council, has been defined from the fragmentation of the historical center area in Urban Functional Lots, adjacent portions of territory which can be clustered in a contained size unitary system small tailored to the complexity of the urban tissue, to the social situation, to the amount and the type of the existing polarities. These areas have been further decomposed into Sub-Lots with the purpose of facilitating the organization and the definition of an order of priority of the interventions. Proceeding with a Lynchian approach [5], for each Functional Lots have been identified Dots, Lines and Spaces (Figure 1).

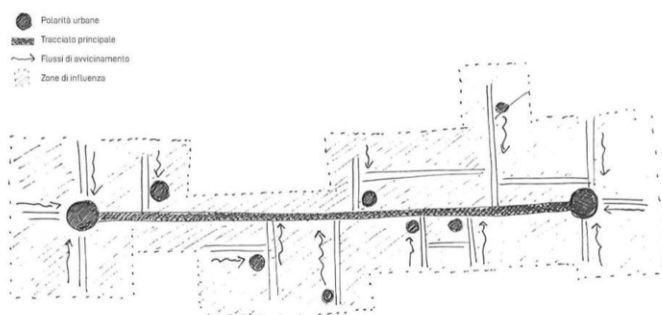


Figure 1. Scheme of the Lecce's urban center perimeter. Dots - Urban Landmark/Polarities seen as spontaneous places of attraction for pedestrian flows). Lines - Links/Main Routes seen as primary or secondary road axis that connect the polarities detected according to a criterion of continuity of the paths. Spaces - Areas of influence as link between polarities and paths.

Lastly, an analytic comparative model has been developed by evaluating the importance that three fundamental criteria (Public Poles and Urban Services; Private social Attractors for public use; Slow mobility and Local Public Transport) have on the social dynamics and on the daily habits and activities of the citizens. It has been provided an extra bonus for the Functional Urban Lots in which have been planned urban development and renovation projects compatible with the strategic guidelines of the Accessibility Plan.

The Pilot Area (Figure 2) plays an important role in the daily activities of the citizens. In its perimeter there are 16 buildings owned by the Town Council and 10 urban spaces such as squares, public gardens, and parking areas. But also from a mobility point of view it represents a strategic hub for the flows and the urban dynamics and takes the form of a complex scenario (pedestrian area, neighborhood street, *road of fast sliding*) as well as one of the most congested axis in the local road system. In addition, inside the Pilot area there are buildings, owned by companies, entities and other public authorities, that host public functions. It has been therefore necessary to draft the Charter of Properties which is the graphic summary helpful to identify and localize public (or for public use) buildings and spaces, to distinguish them and to define different intervention strategies according to their ownership (property of the Municipality or of public or private entities).

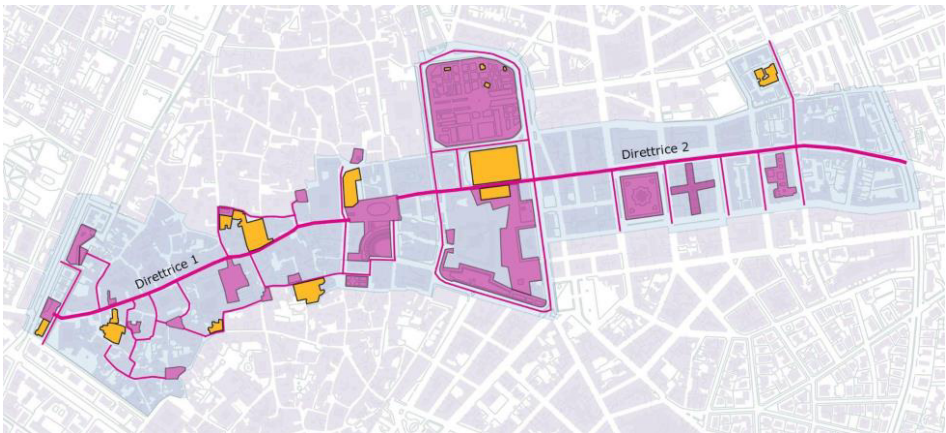


Figure 2. The Pilot Area covers an overall area of 55 ha and extends for about 2 km along two Main Routes: Main Routes 1 (Piazza Sant'Oronzo-Porta Rudiae) touristic axis and seat of a plurality of public and private services and religious buildings. Main Routes 2 (Piazza Sant'Oronzo-Piazza Mazzini) important commercial and leisure axis, place of numerous businesses and activities aimed at ensuring the common good.

3. The survey phase and the creation of digital databases

During the survey phase a preliminary work of organization and planning of the activities has been carried out: the planimetry of the Pilot Area and plans of all the buildings of municipal property have been collected. All road sections, crossroads (i.e. a segment of public road between two road crossings), urban spaces and buildings were given a unique ID code (Figure 3).



Figure 3. Localization of the road sections, crossroad, buildings and urban spaces of the Pilot Area. Example of ID code: L01_S01_T14. L is for Lotto (Lot) S is for Sub-Lotto (Sub-Lot, T is for Tratto (road section).

For each urban space and road section, taking into account pedestrian flows, the presence of municipal and other public services, commercial activities and places of interest, a degree of priority (priority or non-priority) has been established.

As far as buildings are concerned, on the other hand, a preliminary assessment was made of their attitude for adaptation. Census sheets were compiled in which a judgment was given by sight survey of three indicators: reachability of the entrance, reachability of the places, reachability of at least one accessible toilet.

One of the strengths of the Accessibility Plan is to incorporate the needs of the Administration and the citizens, suggesting management solutions rather than architectural ones. For example, in the case of buildings that are not judged adaptable, it may be more convenient to change the mode of use of the spaces and transfer the services open to the public to other more suitable and accessible places.

3.1. In-depth survey

For all the buildings suitable for adaptation, road sections, crossroads and urban spaces, an in-depth survey of the accessibility problems has been carried out by preparing specific maps and census sheets.

Several digital databases have been created in order to facilitate field survey operations and to collect and to manage data and information in an orderly manner and to make fast their transfer to the GIS platform. Specific sheets have been prepared for each category to be surveyed (building, road section, crossroad, urban space) but characterized by the same main structure that is organized as follows:

- general data: general information that allows to locate the item and the description of its main characteristics. It also contains some boxes in which photos, other multimedia content (audio, video, drawings, etc.) and textual notes can be collected.

- themes: each of these sections concerns a specific theme that must be analyzed in order to verify the conditions of accessibility both in the case of open spaces (pedestrian routes, difference in level, pedestrian crossings, parking, urban facilities and obstacles) and in the case of buildings (accessibility of the entrance, horizontal connections, vertical connections, toilets, furniture and equipment, signage, functions and services)

Within each section relating to a different theme, there are elements, defined as *items*, which are identified through a unique code; for each one, the position and characteristics are recorded in order to verify the user-friendliness and if they constitute a source of danger, obstacle or distress for users (taking into account regulations but also recommendations not prescribed by law).

Each *item*, then, was localized on plans (in the case of buildings) or geolocated on a map through GPS coordinates (in the case of road sections, crossroads and urban spaces). After a phase of data consolidation (verification and possible updating of the acquired information), these have been subjected to an in-depth analysis with the support of a GIS system (Figure 4), aimed at the realization of thematic maps preparatory to the next phase of planning of the interventions.

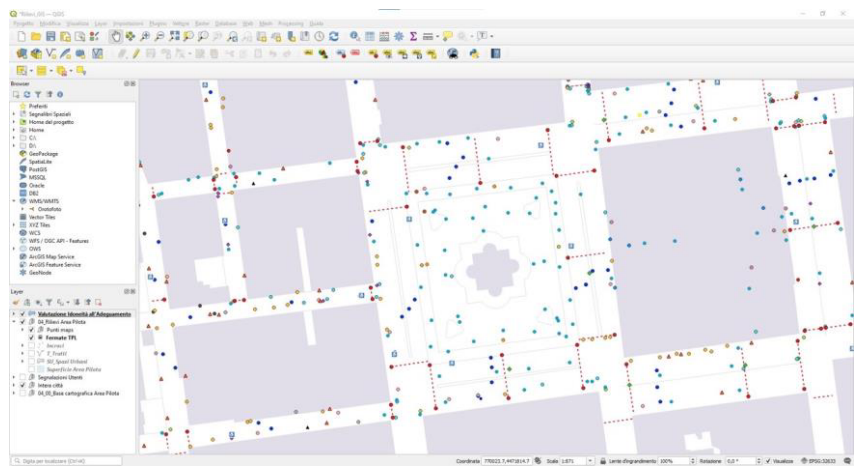


Figure 4. Localization in a GIS system (Qgis) of all the surveyed points. Each color corresponds to a type of item, and the dotted lines represent the existing pedestrian crossings.

4. The Data Analysis and Planning phase

The informations acquired during the survey activities, organized in digital databases and thematic maps, allowed to obtain an overview of the degree of accessibility of the buildings, owned by the Municipality of Lecce, situated inside the Pilot Area.

These general insights allowed to proceed with the planning of maintenance and renovation works and with the reorganization of the confined or open-air venues as well as products and services offered to the citizens.

The measures proposed to improve the degree of accessibility, listed below, have been divided into 4 typologies based on the complexity of the places and on the degree

of detail needed to achieve the results: Strategic Measures (characterized by an integrated and multidisciplinary approach, are intended for large and complex scenarios - streets, plazas and buildings), Ordinary Measures (intended for specific and limited problems e.g. adjustments of the pedestrian ramps, removal of barriers that impede the passage of people moving in a wheelchair), Emergency Works and Maintenance Works.

The measures proposed are also divided into:

- Architectural actions: permanent or temporary projects solutions, in line with the procedures **imposed by** the current legislation, that transform the space adding quality and performance standards missing by choosing solutions appropriate to the context (retrofit strategy)
- Management actions: Interventions that act on the localization, organization and implementation of spaces and services without changing the physical structure of the places
- Communicative measures: projects solutions aimed at promoting individual autonomy and overcoming sensorial and perceptive accessibility problems by providing digital technologies for the improvement of the wayfinding and the content accessibility.

If, by their very nature, Maintenance Works are cyclical and Emergency Works are unpredictable, in order to planning the Strategic and Ordinary Measures that requires an important economical commitment and long lead time, an order of priority has been defined considering three parameters: Effect (based on functions and services offered in the most significant buildings and urban spaces), Urgency (based on the degree of accessibility of the venues encountered during the survey phase), Financial resources: specific funds provided by the Municipality to achieve the set goals relative to the outcomes that emerged from the survey phase and from the negotiations among the various parties involved.

3.3 Attraversamenti				
La conformazione e la collocazione di Piazzetta delle Giravolte è tale da non prevedere la presenza di attraversamenti pedonali. Tuttavia, si ricorda che la piazza è complanare al tratto L01_S01_T13b (ZTL) ed il passaggio da uno spazio all'altro potrebbe causare disagio e/o pericolo per persone con gravi problemi alla vista se non adeguatamente segnalato.				
Tipologia intervento	Descrizione	Immagini	Riferimenti normativi	Priorità
G/F	Rendere più efficace la segnalazione delle fasce ad uso promiscuo pedone-veicoli a motore attraverso pavimentazione sufficientemente contrastata in colore e texture e con segnalazione tattile di arresto realizzata con materiali di pavimentazioni della tradizione locale leccese.		art. 4 DPR 503/96	Alta

Figure 5. The interventions form contains sections with context information, a general description, a short evaluation of Accessibility and the proposed actions. This section, as you can see from the excerpt, is divided as follows: actions type, priority type, description of the actions, explicative drawings or images, norms of reference.

To ensure consistency with the information emerged from the survey phase, the planned activities have been organized in digital GIS databases that connect data to a map, integrating location data with all types of descriptive information. For each point, problems emerged and actions proposed to solve it have been provided.

For the significant buildings and public spaces of the Pilot Area, information sheets have been produced to provide the end user with an overall organic vision of the proposed actions. At the end of the Planning phase, it is possible to proceed to the next phases of

designing and monitoring, thereby defining a complete working methodology that can be used to extend the Accessibility Plan to the rest of the municipal territory.

5. Conclusions

Based on the experimentation of the methodology on the Pilot Area, the Guidelines of the Accessibility Plan of Lecce were drawn up. These are intended to illustrate the implementation phases of the Accessibility Plan in the others Urban Functional Lots identified during the preliminary stages of the Research. In particular, the Guidelines describe in detail the process of the various stages of implementation of the Plan and an Intervention Manual that must guide the Administration technicians for the planning of future interventions and that must be taken into consideration by the other municipal planning tools. The Guidelines guide the implementation of the Plan, but are not to be considered as an intangible tool. This document can be refined on the basis of what will emerge in the designing and monitoring phases of the Plan, and also on the basis of the impact it will have on the city and citizens.

References

- [1] Lauria A. (a cura di) *I Piani per l'accessibilità. Una sfida per promuovere l'autonomia dei cittadini e valorizzare i luoghi dell'abitare*. 2012, Roma: Gangemi.
- [2] Lauria A. *L'Accessibilità come "sapere abilitante" per lo Sviluppo Umano: il Piano per l'Accessibilità*. In *TECHNE: Journal of Technology for Architecture & Environment*. 2014, Vol. 7; pp. 125-131.
- [3] Arengi A, Garofalo I, Sørmoen O. *Accessibility as a key enabling knowledge for enhancement of Cultural Heritage*. 2016, Milano: FrancoAngeli.
- [4] Coulon A. *La scuola di Chicago*. 2001, Lecce: Pensamultimedia.
- [5] Lynch K. (a cura di Ceccarelli P.) *L'immagine della città*. 2001, Venezia: Marsilio Editori

An environment, or any building product or service in it, should ideally be designed to meet the needs of all those who wish to use it. Universal Design is the design and composition of environments, products, and services so that they can be accessed, understood and used to the greatest extent possible by all people, regardless of their age, size, ability or disability. It creates products, services and environments that meet people's needs. In short, Universal Design is good design.

This book presents the proceedings of UD2022, the 6th International Conference on Universal Design, held from 7 - 9 September 2022 in Brescia, Italy. The conference is targeted at professionals and academics interested in the theme of universal design as related to the built environment and the wellbeing of users, but also covers mobility and urban environments, knowledge, and information transfer, bringing together research knowledge and best practice from all over the world. The book contains 72 papers from 13 countries, grouped into 8 sections and covering topics including the design of inclusive natural environments and urban spaces, communities, neighborhoods and cities; housing; healthcare; mobility and transport systems; and universally-designed learning environments, work places, cultural and recreational spaces. One section is devoted to universal design and cultural heritage, which had a particular focus at this edition of the conference.

The book reflects the professional and disciplinary diversity represented in the UD movement, and will be of interest to all those whose work involves inclusive design.



ISBN 978-1-64368-304-1 (print)

ISBN 978-1-64368-305-8 (online)

ISSN 0926-9630 (print)

ISSN 1879-8365 (online)