Inclusive Path Through Pavia: A Study to Link the Langobardic Heritage

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Abstract. The Italian historic centers have an architectural and archeological heritage widespread in the urban structure, which is not always easily accessible due to the orography and materials the streets and the squares are paved with. The topic of the urban accessibility is extremely complex and not easy to solve, also because the removal and overcoming of the architectural and sensorial barriers that could alter the original layout and consolidated historical memory must be avoided. The research investigates the accessibility and usability conditions of the urban environment between the Langobardic building and archeological sites in Pavia (Italy) to identify pedestrian routes that can be covered by weak persons in autonomy or with the help of a companion. The analysis and synthesis of the urban environment produce some maps which report the level of accessibility of the streets and allow to identify the best route between the Langobardic masterpieces in the downtown. The adopted evaluation system is the result of an investigation methodology defined and consolidated over the years by the activities of a group of researchers from the University of Pavia and is independent of the heritage of Langobardic origin; the same methodology can also be used to other types of widespread heritage in the historic center of the city (Romanesque, Lombard Gothic, etc.). The same methodology can be exported to other historical centers and can constitute the tool for the promotion of the architectural and archaeological heritage.

Keywords. Cultural Heritage, inclusive cities, public building and spaces, tourism

1. Introduction

The historic centers of Italian cities are characterized by a rich architectural heritage (which in some cases is accompanied by an equally prestigious archaeological heritage) which represents a strategic resource for the post-pandemic recovery; the last two years, in fact, have significantly changed the way not only of living everyday life, but also of interpreting free time and traveling for holidays.

The research and demand for cultural tourism (already growing in the years before the crisis due to the COVID-19 emergency) is in fact destined for a new growth, also dictated by the limitations and uncertainties that characterize long journeys.

Together with this consideration, it should be noted that one of the objectives of the 2030 Agenda for Sustainable Development [1] (SDG 11) is focused on "making cities and urban settlements inclusive, safe, resilient and sustainable", which calls for the strengthening of efforts to "protect and safeguard the world's cultural and natural

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heritage" (11.4) and the implementation and adoption of "integrated policies and plans towards inclusion" (11.b).

Before the 2030 Agenda, also the UN Convention on the Rights of Persons with Disabilities [2] (written in December 2006 and adopted in Italy with the National Law n. 18 in 2009) has a specific article (n. 30) about the importance of the Cultural Heritage: "Participation in cultural life, recreation, leisure and sport" and the subparagraph (c) invites to implement the necessary measures so that people with disabilities "enjoy access to places for cultural performances or services such as theatres, museums, cinemas, libraries and tourism services, and, as far as possible, enjoy access to monuments and sites important for national cultural importance".

It is therefore evident the need to find the right balance between a cultural tourism proposal that can attract and satisfy visitors and an urban environment capable of enhancing (but at the same time protecting) the historical, architectural and archaeological heritage; this heritage cannot be traced back to individual building artifacts but often resides in the integrity of the urban environment where open and public spaces are as important as the buildings that define the morphology and the city structure.

The cultural tourism is the realization of the desire to exchange, share and know, dictated by the wish to shorten the distance between oneself and the objects of knowledge and historical testimonies. The identity of the Italian culture can find new opportunities for development in the new forms of relationship between heritage and users, both tourists and residents.

Therefore, it appears appropriate to change the focus on the historical-architectural heritage which can become an element of appeal and attraction, especially if it is included in an integrated tourist-cultural system, capable of satisfying the different needs expressed by potential users.

According to this approach, it is logical not only to adequately intervene on architectural and archaeological emergencies (preserving them and making them available to the community) but also a careful study of the surroundings is necessary, respecting the pre-existing environmental values and also ensuring the entire community the chance of visiting and enjoying them safely and independently.

It cannot be forgotten that in public spaces the perceptive values of the ancient environment are so important as the issues of vehicle traffic management, signage, services, equipment and street furniture. The Cultural Heritage conservation needs proceed hand in hand with the re-appropriation of their public use and the overcoming of architectural and sensorial barriers becomes a technical design point that is not limited to the ancient building, but must affect the urban environment, the usability and availability of services such as transport, accommodation and recreational facilities.

In fact, it is believed that the legibility of the value of the individual artefact cannot be separated from the city and its surroundings, from its practicability and functionality, and also the protection of the image of certain areas must be evaluated according to the real needs of conservation and enhancement.

There are several factors that can make problematic the use of historic centers: from the differences in height to the distances to be covered, from the difficulty of orientation to the phenomena of daytime glare or low light at night; these are elements of discomfort that are perceived by a large number of users, not only by people with disabilities: persons suffering from heart disease, obese people or the elderly and children, who have manners of movement and perception completely different. These difficulties can sometimes be due to physiological or communicative reasons and are differentiated from each other as well as the consequent needs and expectations; for this reason, in recent

years an inclusive design approach has become increasingly widespread (as also recalled by the 2030 Agenda), capable of satisfying the different needs of possible users with different solutions, rather than one based on Universal Design, aimed at identification of a single solution "for all".

The University of Pavia has been working on the theme of the inclusive approach and the usability of urban spaces for several years, taking advantage of a historic center of the city (characterized by a rich historical-architectural heritage) as an ideal laboratory in which to develop methods of analysis and solutions to make an environment capable of satisfying the different needs expressed by the users of the city itself.

2. Method

Pavia is a town in the North of Italy, not far from Milan, characterized by an urban structure in which the Roman origin and the Medieval texture can be easily recognized; it was the capital of the Langobard reign and the seat of one of the first universities in Italy (it has more than 650 years). The morphology of the ground, the proximity of the River Ticino, the pavements of a lot of streets (often cobbled) represent some problems that people with disabilities can find moving in the downtown.

During its history, Pavia has been the capital of the kingdom twice in the Early Middle Ages, first with the Goths and then with the Langobards from 572, when it was conquered by Alboin, until 774, when it was conquered by Charlemagne. Important signs of this significant historical period remain in the historic center; some of them are evident and easily recognizable, others are not evident but no less significant from a historical-cultural point of view.

Figure 1. Sant'Eusebio Crypt, one of the most suggestive Langobardic site in Pavia downtown. (Photo by Elisa Bifano, 2021)

The interest of this work for the Langobard age of the city comes from the peculiarities of this heritage. Different studies, recent archaeological excavations and, in particular, the Paolo Diacono's stories in the *Historia Langobardorum* [3] underline the wealth of this era, but the current experience gives us a heritage that is difficult to read

and to be recognized; from this situation comes the appellative of "extraordinary submerged Atlantis" [4] (Romanini) to refer to a precious treasure of art, that survived only underground in the crypts, or hidden by substrates, incorporated into walls or reused in new architecture, waiting to be rediscovered and unveiled.

The research is focused on some Langobardic buildings and sites located in the downtown and on the identification of an accessible and enjoyable path linking them; the research motivation comes from the idea that the recognition and the taking care of a path for a specific historic period can make the Cultural Heritage more appealing, more apparent and so more accessible and enjoyable.

The research can be synthetized in these steps:

- recognition of the most relevant Langobardic elements in the downtown;
- analytic surveys of the streets within the Langobardic heritage;
- digitization of the survey and database organization;
- depiction of maps of the inclusive path between the Langobardic heritage.

First of all, a historic research was developed to identify the Langobardic heritage and its characters: there are buildings but also archeological sites, that cannot be recognized because of the lack of information and signals; moreover, some churches have been transformed in civil buildings, sometimes private so that it is not easy to enter and visit. This study allows to distinguish 12 buildings/sites that become the milestones of a "Langobardic tour".
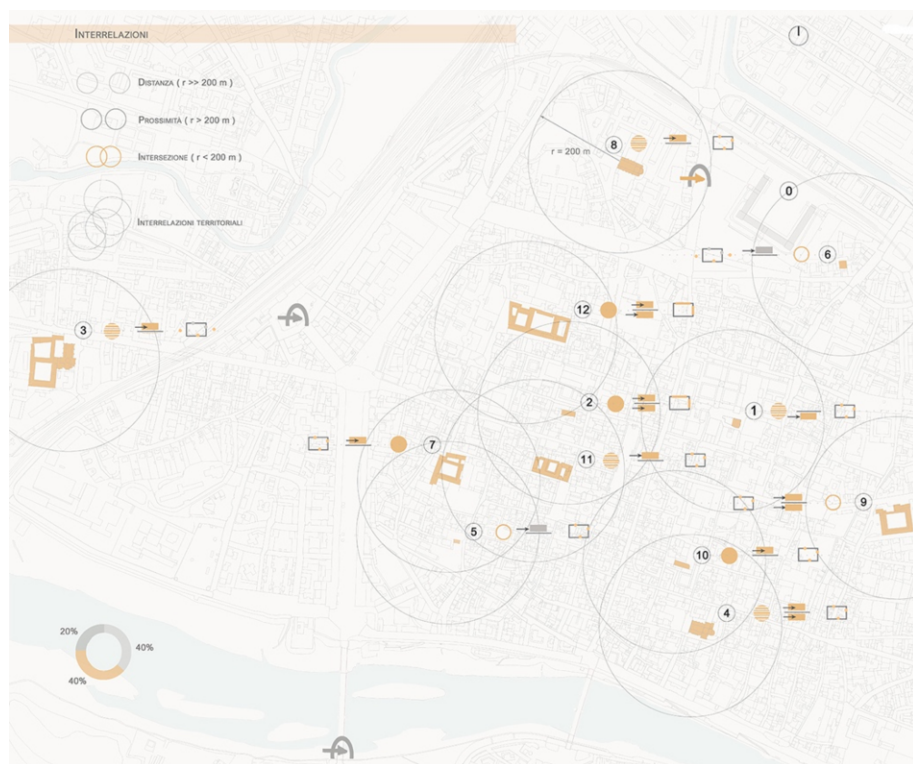

Figure 2. Map of Pavia city center with the Langobardic Heritage masterpieces and the distance within them, in order to identify the best linking path. (Final Thesis Project by Elisa Bifano for the Master in Building Engineer-Architecture at the University of Pavia, *Towards an inclusive town: a method to approach the Cultural Heritage,* 2022)

The urban relationship between the different sites was observed, assuming a radius of 200 m as the "influence" area of each Langobardic site; looking at the downtown (considering the old Spanish surrounding walls) they are so close that it is possible to find a path linking them that respects the radius.

The next step was developed applying an evaluation objective system created during several studies focused on Pavia since 2008 [5]. The assessment tool defines the accessibility level of streets and squares, divided into path's sections, pedestrian crossings and pedestrian areas. The tool works through the identification of macro-indicators structured on objective parameters.

Each area of investigation includes several elements to be carefully considered and the tool is structured to give automatically a value in relation to a "tick" or "not tick" of these elements in the evaluation card. The sum of each value gives a number (positive or negative) which is the reference to assess the accessibility level of the path detached: for values less than or equal to zero the path's section is considered "not accessible" (identified with red color in a map that was realized at the end of the analysis), for values between one and four it's considered "accessible with assistance" (in yellow in the map) and for values equal or greater than five it is considered "accessible" (in green).

The analysis of the path's sections is divided into four macro indicators:

- general characteristics;
- paving of footpaths;
- car parks and public transport;
- urban furniture.

Each macro-indicator is divided into several parameters and the filling includes multiple choices from a list of elements, that takes into consideration both motor and sensorial disabilities. For example, the macro-indicator of "general characteristics" is composed of:

- type of path;
- sidewalk;
- covered path;
- path profile.

The analysis of pedestrian crossings is structured with the same methodology, but with only two macro- indicators with different elements. These macro- indicators are:

- general characteristics;
- paving of crossing.

Finally, the accessibility assessment tool applied to the squares includes the whole pedestrian area. In this case the macro-indicators are:

- general characteristics;
- paving of footpaths;
- urban furniture.

The analysis was recorded between October 2021 and February 2022; the cards have some photos that show critical (pavement narrowing to less than 90 cm, minimum awning and brise soleil height less than 210 cm, inclination of the slope, etc.) or significant elements for promote the independence of people with disabilities.

After the survey's phase and after that the cards were transformed in Excel files to obtain the value of the level of accessibility (as described above), the results are summarized on different maps that show the three levels of the pedestrian paths between two Langobardic sites:

- green: accessible;
- yellow: accessible with a guide;
- red: not accessible.

Figure 3. Map showing the path between San Felice and Collegio Senatore (Final Thesis Project by Elisa Bifano for the Master in Building Engineer-Architecture at the University of Pavia, *Towards an inclusive town: a method to approach the Cultural Heritage,* 2022).

3. Results

The results of this part of the research are different maps that show the analysis of the urban environment enclosed within the Langobardic sites.

From the observation of the maps, some conclusions can be obtained:

- many crossings are not accessible, and this is often due to the lack of connection ramps between the paths and the road in addition to a poor signaling for blind and deaf and hearing impaired persons;
- some streets are not accessible, and this is due in large part to morphological issues (slope of the roadway and sidewalks) that cannot be resolved in terms of design without changing the original Medieval image;
- many problems are related to the pavement;
- some pedestrian areas are often critical issues related to street furniture (which is sometimes hindrance to the movement of pedestrians), or to their own morphology.

Moreover, the assessment of the territorial interrelationships between the different Langobard sites highlights the compactness of the sites within the historic center (the maximum distance between one site and another is about 650 m) and allows the

identification of 2 Langobard macro areas in the historic center that develop, from north to south, following the orientation of the cardo maximus (Corso Strada Nuova) and which communicate through 2 parallel axes to the decumanus (Corso Cavour-Corso Mazzini).

Five maps show the best results in terms of distance and accessibility. Each map contains the representation of the current accessibility levels (distinguishing between road sections, crossings and pedestrian areas), a sketch of the perceived environmental image and a scheme that compares the indicators of the accessibility evaluation form.

The union of the different paths creates a "ring" between the Langobardic sites located in the historic center; moreover, the maps show the qualities, in terms of accessibility, and the residual criticalities that have to be solved in order to improve the enjoyability of the Cultural Heritage.

4. Consideration

The research confirms that the historic urban structure has some morphological and material situations that make not easy to move for persons with disabilities. However, it is possible to improve the level of accessibility and facilitate the use of space for persons with disabilities showing them the best path.

The results also represent a useful tool for the planning of maintenance work on public spaces and can be the starting point for the development of projects, wider and more detail to improve the accessibility of the city of Pavia.
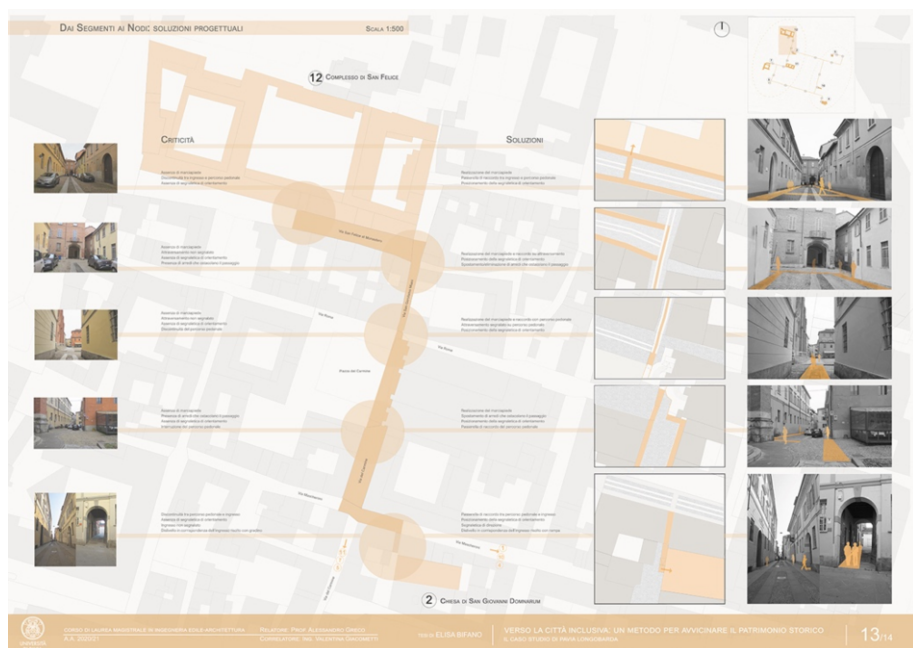

Figure 4. Map showing the critical point of the path that can be useful for programming architectural interventions at the urban scale (Final Thesis Project by Elisa Bifano for the Master in Building Engineer-Architecture at the University of Pavia, *Towards an inclusive town: a method to approach the Cultural Heritage,* 2022).

The structure of the accessibility assessment tool and the syntheses developed into this research are very easy to be understood and to be applied not only for engineers, architects or researchers, but for all.

The objective methodological approach and the systematic application of the assessment system on different case study can represent an important aid for the planning of architectural interventions at the urban scale. The exportability of the methodology can also create an inclusive view about accessibility problems to allow the identification of possible design solutions according to a conscious process.

References

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