CLUSTER ACCESSIBILITÀ AMBIENTALE

a cura di / edited by
Adolfo F. L. Baratta, Christina Conti, Valeria Tatano

ABITARE INCLUSIVO

Il progetto per una vita autonoma e indipendente

INCLUSIVE LIVING

Design for an autonomous and independent living

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Società Italiana della Tecnologia dell'Architettura

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UNIVERSITÀ DEGLI STUDI DI UDINE

Università Iuav di Venezia

ROMA TRE UNIVERSITÀ DEGLI STUDI

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I volumi inseriti in questa collana sono soggetti a procedura di double blind peer review.

Il presente volume riporta parte del risultato di una attività di ricerca interuniversitaria che si colloca nel più ampio programma del Cluster AA della SIT*d*A che aggrega studiosi, ricercatori e docenti universitari con competenze specifiche della disciplina della Tecnologia dell'Architettura costituendosi quale luogo di scambio di informazioni, di conoscenza e di confronto, anche con funzione di sensore dei contesti per una progettazione tecnologica in chiave inclusiva di soluzioni accessibili.

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CLUSTER AA | **01**

ABITARE INCLUSIVO / INCLUSIVE LIVING
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Co-progettazione dell'accessibilità urbana. Un servizio di fruizione inclusivo per la zona universitaria di Bologna

The paper deals with accessibility issues at district scale assuming the perspective developed in the "ROCK - Regeneration and Optimisation of Cultural heritage in creative and Knowledge cities", a three years Research Innovation Action project funded by the EU Horizon 2020 Research and Innovation Programme (Grant Agreement N. 730280). ROCK is currently in its third year of activity and it is coordinated by Bologna Municipality with the technical-scientific assistance of the University of Bologna. ROCK field of research, inquiry and action are urban historic contexts, assuming Cultural Heritage as leading engine for their sustainable development, economic growth and regeneration. In ROCK, accessibility is connected to all the aspects that determine the possibility to fully participate to urban life: overcoming of physical and economic barriers, sense of security, equal access to institutions, cultural productions, empowerment, information and opportunities. The contribution focuses on the participatory approach adopted by the city of Bologna in testing this meaning of accessibility in a real environment and on the co-production path to design a service for inclusive fruition aimed at fostering accessibility to the university area and its Cultural Heritage. This experience, called "U-Area for all" has started in March 2019 and involves institutions, actors of the area, students, residents and people with disabilities in several initiatives, such as the co-mapping of urban itineraries using specific GPS technological devices.

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Introduction

Urban systems are complex systems composed by the built environment, a series of networks and people. People interact with the built environment in several ways and for different reasons: for working, studying, leisure or to access services. The way in which those interrelations take place and function is highly influenced by the way in which all services are accessible to people needing them. Cities able to set high standards in the way people can access all the needed services are more inclusive, safer and they present less exclusion phenomena. Accessibility is actually considered a core theme for city. However, some authors argues that this is a paradox as it is possible to affirm that cities, together with language, emerged in history exactly as a collective way to reach high degrees of accessibility to and between people, to objects and ideas (Berlin, Memo, 2009).

Nevertheless, also the Sustainable Development Goals (SDGs) recognize how much this theme is crucial for reducing exclusion phenomena and for improving life quality in cities. The paper focus on this thematic by analysing and explaining the methodology used and the results obtained by the Horizon 2020 Work Programme 2016-2017 funded project "ROCK– Regeneration and Optimisation of Cultural heritage in creative and Knowledge cities" (G.A. n. 730280). ROCK project is a three years Innovation Action working on cultural heritage-led urban regeneration in 10 European cities: three Replicator Cities implementing the most part of actions and seven Role Model Cities sharing their successful methods and experiences.

Objective and methodology

The objective of this paper is to show approaches and examples for improving urban accessibility in urban districts with concentrations of cultural heritage. In particular, the paper aims to show the need for considering accessibility not only on the mobility perspective but as "universal accessibility". In fact, ROCK project consider accessibility as a wide theme, encompassing physical accessibility but also other typologies and, in addition, it considers accessibility for everybody and not only for a portion of the population. In ROCK, accessibility is connected to all the aspects that determine the possibility to fully participate to urban life, overcoming physical and immaterial barriers.

In order to assess the success of project actions, the project use a Research-Action methodology. This method is based on implementing pilot actions in real environments according with the identification of core systems of actions and sub-actions able to trigger positive chains. After their implementation, actions are monitored according with selected key performance indicators in order to understand if corrective measures or changes are needed. This is an iterative method that repeat itself several times in order to trigger positive cascading changes into cities and districts.

The paper is divided in two core parts. The first one assess a brief overview of accessibility literature, focusing on the main aspects of the topic. The second one describe some of the ROCK actions devoted to improve district accessibility. Finally, the conclusion will define some crucial elements to be considered when implementing accessibility actions in urban districts with cultural heritage in phase of regeneration.

Urban accessibility: Towards a Urban Accessibility definition

A shared definition of urban accessibility is actually still not present. However, scientists across the world agree in some main characteristics that an accessible city might have and that are here recovered and commented. The most part of the literature about this topic concurs how, for many years, the word has been strictly linked with mobility (Berlin, Memo 2009; Tocci, 2010; Ingram, 1971), giving to the "accessible city" the configuration of a "mobility-friendly city".

According to its etymology in fact, the word comes from the Latin *accèdere* and it means "to pass/walk through". In addition, most encyclopaedias also report a definition linked to this concept: urban accessibility is the possibility to access easily to a place; accessibility makes the life in the city more fluid; urban accessibility is also the continuous access to experiences able to connect different cultures and ways to think, the variety and the causality of these experiences improve the possibility of creating new cultural and unforeseen synthesis (Grande Dizionario Italiano Hoepli; Enciclopaedia Treccani). Accessibility is considered a positive characteristic of urban contexts that need to be constantly pursued in urban planning. Even if most part of the definitions tend to link accessibility with mobility and movements, thus to the ability to reach physically a place, the last one shows how the term is wider. In fact, urban accessibility must be also considered not only in relation to places but also in relation with people. It is crucial that people are able to reach places and services, but there is an experiential dimension of the topic that must be taken into account. According to this reflection, in fact, people must be able to access also immaterial services that a city provide such as: information, cultural experiences (considered in their totality of events, moments, sub-cultures, meetings with other people, etc) and nowadays digital devices and digitally shared contents. Already in 1959, Hansen (Hansen, 1959) and, later, Lefebvre (1970) focused on these aspects and linked to accessibility the concepts of possibilities, freedom, human rights. Accessibility becomes thus a way to fully live in the city and also to fully understand and experiment it (Lynch, 1960).

According to Boffi (2012), there are five dimensions of urban accessibility:

- physical/geographical related with the possibility to reach a place;
- economic in relation with the possibility for people to afford the transfer, but also to access services;
- infrastructural, that point out the hard mobility sector of a city;
- temporal / related with time;
- experiential and sociological, that focus on people needs and on the way in which they live the city.

The temporal dimension and the experiential one are two of the most interesting characteristics in which actual planning can be focused. In fact, the potentialities given by the new technologies, new devices, new communication meanings and new types of working and moving have enhanced people freedom in performing the city in different time frames. Unlike what happened in the past, where people timeframes were marked by a daily work of around 8 hours, today there are more and more variations in times and spaces that makes the synchronization of services and activities more complex. Thus, in this complexity, accessibility has also a personalization and individualist connotation. The de-synchronization of times, spaces, values leads to enhanced exclusions tendencies: increasing parts of the society are actually excluded from services and experiences due to this phenomenon. If, in the past, the most common categories of people linked with accessibility issues were people with physical or mental disabilities, low-income people and elders, currently these groups are extended. This complexity needs to be taken into account in future cities.

Urban accessibility: ROCK Universal Accessibility

Into this tangled contest, ROCK project chose to work in line with the principles included into 2006 UN Convention of the Rights of Persons with Disabilities. According to the document, it is necessary to guarantee the accessibility not only to the physical space, but also to communication systems, transports and services. In particular, there is a need to implement a Universal Design approach in order to carry out public programming, services and spaces that

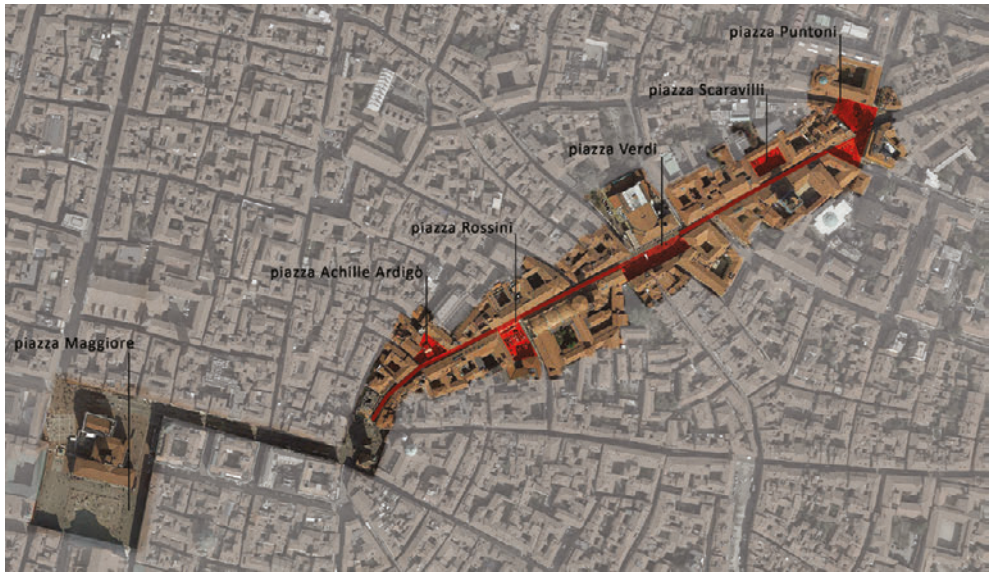

Fig.01 The ROCK demonstration area in Bologna (in red).

can be used by all people, without the need for adaptation or specialist modifications, with the sole option of assistance tools for particular groups of people with disabilities.

ROCK project aims to apply and integrate this definition in a real environment and to point out some experiences, as pilot best practices, to be tested in real environments. The main focus of the project, in relation with the topic, is to understand and test actions that make city perception and experience open to everybody, in a universal way.

The next paragraphs will describe some of the ongoing actions in Bologna city, in the frame of the ROCK project. Specifically target groups are considered to be people with different levels of disabilities (both sensorial and physical) as usually European historic city centers present irreversible obstacles for this target group. Also the absence of universally readable signs (blind, visually impaired people, foreign persons, etc.), the poor management of light and the sense of safety are topics that the project is considering for improving urban accessibility of historic areas.

Participatory practices to re-define Urban Accessibility in the university area of Bologna

The ROCK pilot site is located in the historical city centre, in the University zone, named U-Area by the project. It is a distributed along a major street, via Zamboni, that connects a system of public spaces whose central core is Piazza Verdi (Fig. 01). The area hosts a multiplicity of university headquarters and ceremonial buildings, cultural facilities and gardens, and it is characterized by the presence of the typical Bolognese porticos. The huge presence of students is turned into a problematic issue for the coexistence with the other citizens. The university area is perceived as a sort of separated district and its cultural heritage is underused and not well known.

U-Lab is a laboratory of participatory practices dedicated to the U-Area funded by the ROCK Project and devoted to activities of observation, design and experimentation in support of the actions of the project: it is a transversal path to the different projects already involving the area, to accompany its regeneration, to develop new ideas for its enhancement, to test new practices, the unconventional use of spaces, the creation of services and the promotion of some experimental actions. U-Lab involves the Municipality of Bologna, the University

of Bologna, the Rusconi Foundation and the Opera House and it is coordinated by the Foundation for Urban Innovation.

U-Lab is developed through two main lines of action:

- listening and co-design: this phase aims to collect ideas and proposals to create a shared medium-term vision to start a common project of transformation, enhancement and collaborative management of the district. In January and February 2018, thematic meetings were organized about the themes of accessibility, sustainability, collaboration for new productions. Local stakeholders that have a particular relevance or competence with respect to the proposed issues or have ongoing projects have been involved. Some in-depth workshops focused on technologies applied to the urban environment (e.g. light, sound, greening, sensors). In addition, a series of public meetings were held on specific places and areas of the U-Area[1];
- experimentation: this phase has the objective of putting in place experimental actions and animation of the territory, all selected through a call for proposals. The U-Lab call for proposals was opened from 12 to 27 December 2017 and received forty-seven proposals; sixteen organizations was selected.

Listening and co-design: shared conditions for an accessible U-Area

The first meeting, held on January 16, 2018 at the School of Law in Via Zamboni, was an opportunity to discuss the theme of accessibility seen from different perspectives: physical, cultural, relational and as an element of security and inclusiveness. The meeting was also a moment of presentation, analysis and discussion between different actors who brought their experience[2].

The different groups analyzed the U-Area with respect to the topic, declining and sharing a definition of accessibility applicable to the specific context, identifying criticalities and opportunities and defining a set of requirements and guidelines. The working groups were asked to integrate and enrich the definition of accessibility proposed by the 2006 UN Convention on the Rights of Persons with Disabilities and adopted by the ROCK project. Participants were invited to apply the concept of accessibility not only to places, routes and spaces but also to cultural institutions and contents, learning opportunities, transports, existing services, community life, technology, businesses and catering offered in the area.

Different meanings of the concept of accessibility and suggestions on how to achieve higher levels emerged from the debate:

- accessibility as security: the lack of a sense of security was detected as one of the main limits for the accessibility of the U-area. A place must be safe and perceived as such. It must therefore be an animated, watched over and frequented place. The increase in safety can be achieved also through indirect actions, aimed at coping with situations of degradation, discomfort and violence;
- accessibility as autonomy: accessibility is also about ensuring people's autonomy in accessing places or services, reducing their dependence on other people. Accessibility is also the freedom in evaluating and selecting among available options: being able to know in a complete way and in advance the characteristics of the offer and then decide independently, basing the judgement also on the different degree of accessibility. Hence

1 Piazza Scaravilli, piazza Rossini, area of the Opera House, via delle Moline.

2 The following organisations took part in the meeting: AGFA/FIADDA Bologna, Students Association Lab Italia, Accaparlante, Comitato Piazza Verdi, Bologna Municipality, Confindustria Emilia, University Student Council, Department of Sociology and Economic Law, Ente Nazionale Sordi Bologna, ASPHI Onlus, Del Monte Foundation, Fondazione Rusconi, Insitute for the blinds Francesco Cavazza, Open Group Società Cooperativa Sociale Onlus, PeacockLAB, Refugees Welcome, Scuderia Future Food Urban Coolab.

the need to guarantee everyone the same degree of preliminary information, beyond their own physical, cognitive and digital abilities, the necessity to provide clear and universal signage and to have guidance technologies;

- universal accessibility: the use of spaces must not be "sectorial", i.e. allowed only to certain segments of the population, but must be an element that facilitates the coexistence of different practices of use. For example, the possibility of integrating people from different languages and cultures. This is achieved by using various forms of communication and graphic representation forms. Universal accessibility concerns not only human beings but requires also accessible environments for animals (dogs in primis), particularly important for people with disabilities;
- economic accessibility: the cost of goods, services and cultural opportunities might constitute a barrier to their access so such barrier should be removed in order to widen the range of users and to ensure a social mix of presences;
- accessibility as dialogue: accessibility is the possibility to make decisions, the opportunities to participate, communicate one's own idea and to influence the way of living the places and their spatial transformations;
- accessibility as usability: accessibility is not only the possibility to "access" but also to use and enjoy. In this respect, speaking of 'welcoming accessibility' has been judged more appropriate, as it includes not only the physical dimension of spatial access but also a relational dimension and a particular attention to communication[3].

Experimentation: "U-Area for all" inclusive fruition service

"U-Area for all" is one of the experimental activities included by U-Lab in the 2019 program: it is a path to design and test a service of inclusive visits that allows to discover the University Area of Bologna and the opportunities that its museums, its cultural centers and the University itself can offer. Visits must be accessible for people with disabilities but the wider challenge is to allow the discovering of one of the richest in history and cultural heritage part of the city.

The initiatives already activated are:

- a call for proposals to select those who collaborate in the design of the service with the ROCK project working group, coordinated by the Foundation for Urban Innovation;
- a co-design path that, between April and October 2019, involves institutions and all the actors of the U-Area, along with people with disabilities (Fig. 02).

The call for proposal

The call for proposals, which expired on 22 March 2019, was addressed in particular to organizations that are actively committed to accessibility, sustainability, technology, safety, enhancement of cultural heritage and in general care of urban common goods. The selected teams[4] participate in the operational working group and are responsible for some specific activities:

- mapping the accessibility and usability of the main buildings and services located in the area, in particular along the axis of via Zamboni, by systematizing the information already available and supplementing it with new qualitative assessments;
- defining the format of 3 inclusive visit routes, with particular regard to people with disabilities;

3 For example, because of ineffective communication, the presence of students at the Opera House is very limited, despite the reduced rates that are dedicated to them.

4 The winners were the MUVet Association and the group led by Accaparlante Centro Documentazione Handicap (CDH), followed by Istituto Cavazza, Gualandi Foundation and La Girobussola Onlus.

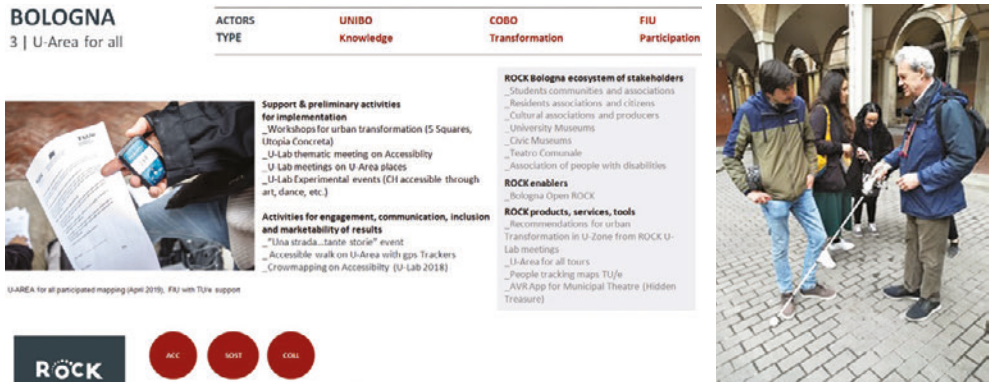

Fig.02-03 U-Area for all. U-AREA for all participated mapping (April 2019). *FIU with TU/e support*

- elaboration of information contents that can be diffused through physical and/or digital supports, developed to be easily usable by people with different disabilities.

The co-design path

The two co-design sessions held so far have experimented the use of the typical tools of Design Thinking (Plattner *et al.*, 2011) and had the objective to collect the needs most felt by the users of the area. According to the discussions, the main topics to be considered as guidelines for the development of the service of inclusive visits were selected as follows:

- working on a scale of intervention that involves a wide system by linking the institutions and services already present in the territory: considering not only the single valuable places, but also their connections, including green areas;
- working on communication tools to increase the signage and providing information in different codes, attentive also to cognitive disabilities; use of images of details and significant contents as elements to arouse interest and curiosity, inviting to enter museums and institutions;
- working on themed proposals: a themed itinerary about music (Museum of Music, Municipal Theatre, Conservatory) and one on the Jewish Museum and the Ghetto; enhancing the system of underground canals and the already existing route on partisan history; valorising the axis of the museums along Via Zamboni; developing a specific signage about the Bentivoglio family and their history related to the city;
- specific needs for hearing disabilities: making available a special device for reading the description of the artworks for individual visits as usually the availability of an interpreter LIS is possible only for group visits;
- specific needs for visual disabilities: increasing the supply of artworks that can be understood through direct contact (touch); accessing museums with the help of guide dogs and sticks; more tactile documentation (maps).

The outcome of the co-design process will be a set of guidelines that the Rock project team follows in implementing the service that will be promoted by Bologna Welcome[5].

5 This Convention & Visitors Bureau of Bologna deals with the development and management of tourist reception activities and promotion.

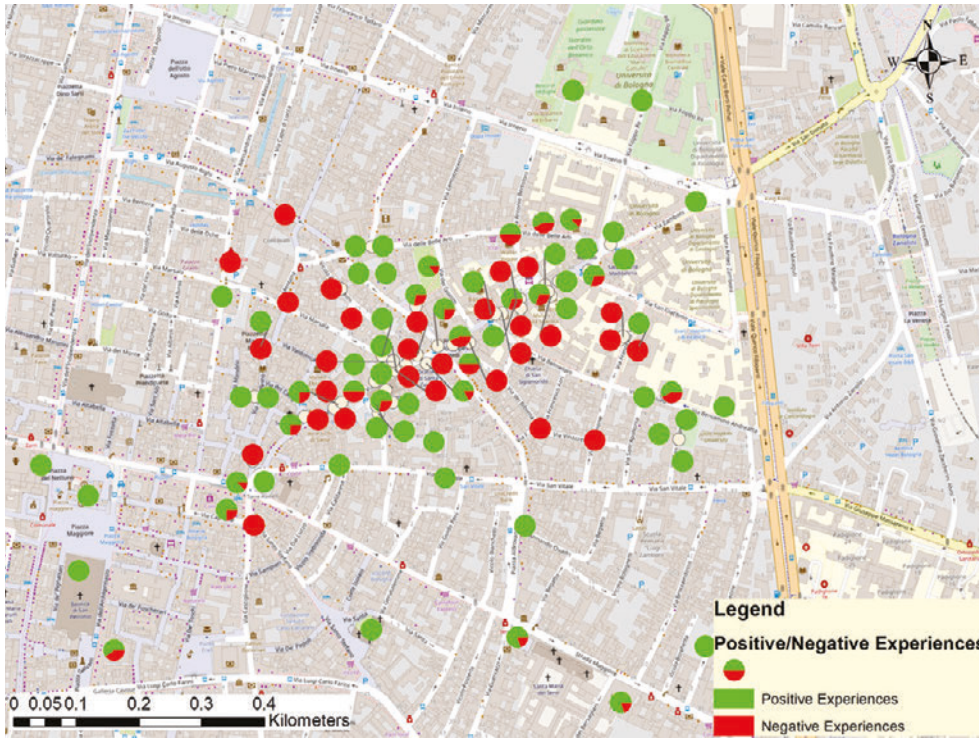

Fig.04 Mapping of the U-Area with GPS device: positive and negative experiences in the U-Area. *Elaboration by Gamze Dane and Soheil Derakhshan*

Exploring the U-area with the help of GPS devices

As already mentioned, the practice of experimentations is one of the lines of action on which the U-Lab laboratory is based. Below, we propose a description of one of the main experiments already implemented, aimed at testing the creation of inclusive urban routes for an universal use.

The exploration, which took place on 12 April 2019, was an opportunity to test a device provided by the Eindhoven University of Technology (TU/e) able to track the path through a GPS and record feedbacks geolocalizing them in order to facilitate the mapping (Fig. 03).

The route started from Piazza Scaravilli and then continued all over the area along different routes, depending on the interest of participants. A total of 273 experiences were recorded, of which 75% were positive (curiosity/interest, fun, joy, inspiration, relaxation, surprise) and 25% negative (confusion, disgust, irritation/rage, boredom, fear)(Fig. 04). Then, these experiences were categorized according to their causes. The distribution of inaccessible areas and the characteristics of the visit experiences were also mapped: their duration, the most frequented roads, the type of users (students, workers, pensioners) (Fig. 05)[6].

Other experiments already carried out are Carotaggi - an unusual walk towards the U-Area, and Pianeti solitari - experiential mapping, both proposed by MUVet. In both of these experiences, the exploration and observation of the University Area using the whole body and its movement have been proposed to people with and without disabilities.

6 All the information has been reproduced in thematic maps by Gamze Dane and Soheil Derakhshan from the Eindhoven University of Technology.

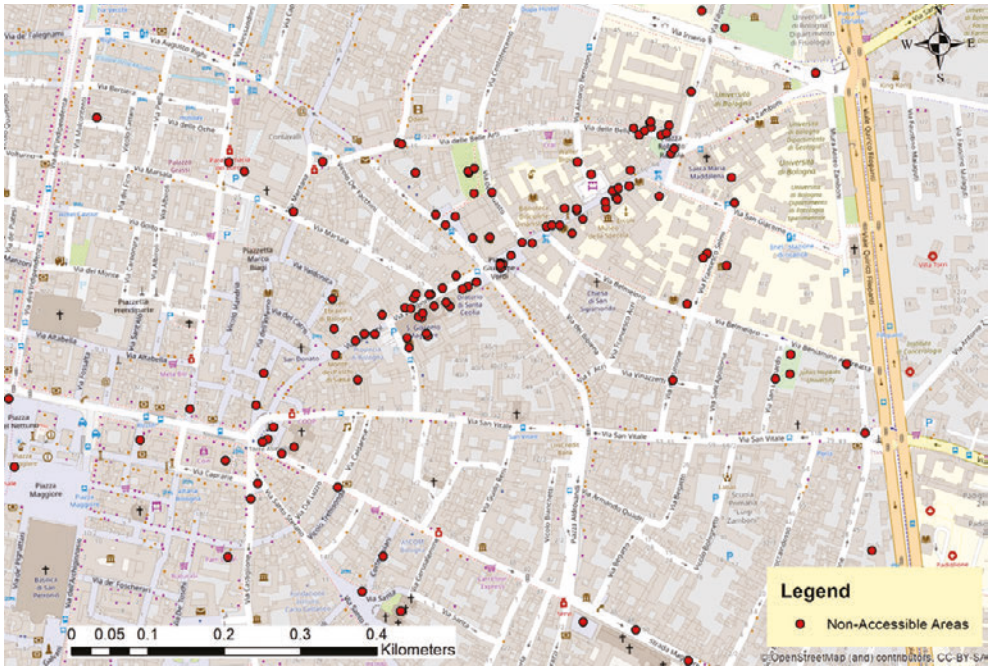

Fig.05 Mapping of the U-Area with GPS device: non-accessible areas. *Elaboration by Gamze Dane and Soheil Derakhshan*

Conclusions

The paper showed some of the current actions that ROCK project is implementing in the city of Bologna. According to the brief literature review and with the results of the participatory approach, ROCK intends accessibility not only on the physical perspective but also including the access of everybody to urban services, knowledge and experiences. ROCK is in fact dealing with experiential learning, personal and collective empowerment, as ways to increase district accessibility. However, some additional points are also emerging in the process and mainly in discussing with local communities: while implementing accessibility actions it is crucial to consider how the continuous use of spaces and presence of people, due to the constant increasing of services, is necessary in order to decrease inappropriate uses of spaces, for example micro-criminality or homeless appropriation of space. The approach used by ROCK is thus embodying the overall strategy of "Zona_U in many colors", that includes the following sub-actions:

- a safer Zona U (micro-criminality reduction, more sense of safety, more urban decor);
- a more inclusive Zona U (possibility to reach new publics, coexistence between multiple uses of space);
- a user-friendly Zona U (including making institutions and culture more inclusive);
- a better lightened Zona U (use of the light for communicating the space in different ways, for increasing the sense of safety).

In conclusion, ROCK demonstrates how urban accessibility is a wide theme that need to be discussed and co-designed within communities and not only inside the traditional institutions, in order to make it really universal.

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Il volume affronta il tema dell'abitare presentando i risultati di studi, ricerche e sperimentazioni di architettura in chiave inclusiva, raccolti in occasione del convegno dal titolo "Abitare inclusivo" organizzato a Udine nel 2019. Il progetto che ha reso possibile questa antologia strutturata di esperienze nasce dalla volontà dei componenti del Cluster Accessibilità Ambientale della Società Scientifica della Tecnologia dell'Architettura (SITdA), di rilevare un modello funzionale attuale di riferimento scientifico interdisciplinare dell'architettura, declinato alle diverse scale delle opere, dei prodotti e dei processi, per l'avanzamento tecnologico di una progettazione sempre più mirata alla persona e al suo valore in un processo etico di sviluppo sociale.

The volume deals with the issue of living in an inclusive point of view by presenting the results of contributions, research experiences and design experiments collected at the international conference "Inclusive Living" organized in Udine in 2019. Starting from the will of the Accessibility Cluster of the Italian Society of Architectural Technology (SITdA), this structured anthology of experiences aims to define a functional, interdisciplinary and scientific reference model in the field of architecture. This has to be declined at different scales of works, products and processes so it can guarantee the technological progress of a design that is increasingly targeted to the person and its value into an ethical process of social development.

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