SuperABLE: Matera Accessible for All

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Abstract. The article describes an experimental approach focused on developing urban regeneration strategies for Matera, Italy, with a particular emphasis on addressing the needs of all, including people with different kinds of impediment. The study was conducted by a group of students in an urban planning course who selected measures to improve various urban components, including heritage, urban regulation and pedestrian safety. The result was a draft guidelines for the city that can inform public debate on "Planning for migrants, ethnic, minorities and persons with disabilities" and support the city's cultural and tourism development strategy. The study's strengths include its comprehensive view of specific problems and issues, a logical process for connecting problems and solutions, and a reference matrix based on NUA principles. The research contributes to the development of tools and methodologies for NUA downscaling at the local level, leveraging innovative technologies and thematic components of urban design.

Keywords: New urban Agenda 2030 · Sustainability · Urban design · universal design

1 Introduction

The New Urban Agenda (NUA) is a widely accepted concept that has led to the development of new agreements among key stakeholder groups involved in urban planning and territorial management. The NUA is associated with global sustainability targets and has resulted in a new form of commitment in public decision-making. The United Nations describes the NUA [1] as a global commitment to promoting sustainable urban development, ensuring that cities and human settlements are inclusive, safe, resilient, and sustainable. The NUA aims to address global issues by generating local innovations in urban management practices. Although there is no comprehensive conceptualization of how to downscale NUA principles and objectives, recent studies have shown that teaching sustainable development requires more and different tools, particularly in academia [2–4]. The study conducted by a student class at the University of Basilicata demonstrated the effectiveness of an academic approach in scaling down NUA principles and provided a preliminary structure for developing new tools to reinforce

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the new generation of territorial technicians, particularly engineers and architects. The study involved students developing a project in Matera (EU Capital of Culture 2019) that assessed the compliance of NUA principles in a specific sample area. The project is titled "SuperABLE" and it analyzed the implementation of the principle of "PLANNING FOR MIGRANTS, ETHNIC MINORITIES AND PERSONS WITH DISABILITIES" identified gaps and problems, and proposed design hypotheses to improve the situation. The topic overcomes traditional approaches to avoid local barriers for disabilities in specific buildings or public spaces through a comprehensive approach oriented to offer an integrated vision of a city where people with limited mobility capacity can access and benefit city services and public facilities through inclusive approach. The results of the study demonstrated the effectiveness of an academic teaching approach on scaling down NUA' principles [5–7] and provided a preliminary structure for developing new tools to reinforce the new generation of territorial technicians, particularly engineers and architects [8]. In conclusion, this paper highlights the key arguments and recommendations for future applications of the NUA in urban planning and territorial management.

2 Downscaling NUA

The United Nations has adopted the [9] (SDGs), which consist of 17 global goals with 169 targets aimed at ending poverty, protecting the planet, and ensuring peace and prosperity for all. The adoption of the SDGs has brought sustainable development into public policy making. SDG 11 focuses on making cities and human settlements inclusive, safe, resilient, and sustainable, and provides a framework for action on sustainable development. Education and training are essential to ensure the successful implementation of the SDGs. The UN recognizes the importance of education in achieving the SDGs, and UNESCO provides guidelines for educators to incorporate sustainable development into their teaching practices. However, teaching sustainable development requires new tools and approaches, especially in technical disciplines such as urban planning and territorial management. The downscaling of the New Urban Agenda (NUA) principles and objectives to the local context is an open topic, and a bottom-up approach based on the participation of local communities and stakeholders is needed [10–13].

The research focuses on verifying the level of compliance of the principle of universal accessibility in the specific context of Matera addressing the general research question: "how to improve city accessibility for all?". In particular, the city which represents a unique tourist destination site, is an open laboratory in order to experiment with innovative forms of places accessibility within an integrated tourism offer targeted on limited mobility people or other specific weaker groups of city users [14–16].

In particular the focus is on the concept of "right to the city" that according to NUA must be reinforced through explicit inclusion and integration efforts.

Accessible and disability inclusive urban planning is usually called "universal design" and it should represent a driver to enhance the quality of urban design in the ordinary process of urban management and mainly in urban regeneration projects. When we "design for the margins", we "design for all", and it benefits everyone (United Nations Department of Economic and Social Affairs). Participation of disability stakeholders is essential. Persons with disabilities and the organizations that they lead are stakeholders,

rights holders and agents in the urban development process Young territorial technicians, such as Engineers and Architects, have the opportunity to gain competitiveness and readiness to develop solutions to the emerging problems in urban and territorial sustainable planning, by experimenting, in practice, the design of urban transformations through the lens of NUA.

3 The Case Study and the Target

Through social, economic, environmental and cultural considerations, the complexity of urbanization underscores the innate interconnections between what is the New Urban Agenda and the Sustainable Development Goals: an equitable and just world for present and future generations, where no one and no place is left behind.

Some connections between the two global agendas are evident, especially with regard to SDGs 11 on sustainable cities to "Make cities and human settlements inclusive, safe, resilient and sustainable." Cities are where new societies develop and must be able to accommodate diversity. This includes having to provide access to places in a safe and sustainable way while paying attention to the needs of those in vulnerable situations such as the elderly and disabled. The target audience for the project is "Planning for migrants, ethnic, minorities and persons with disabilities" which involves respecting the principles of equality, welcome, inclusion and integration with participatory and conscious urban planning that benefits everyone. Hence the importance of transit accessibility for connections and services and the creation of community spaces for cultural exchange. The New Urban Agenda promotes initiatives that benefit all of society, especially the most fragile with access to transportation, health and education facilities, and even historical, architectural and artistic heritage. The area of intervention identified includes the historic center of the city of Matera, such as the Sassi and the Piano, which in its conformation of urban fabric closely related to the surrounding landscape unique in the world, presents peculiarities in terms of accessibility. In fact, the first nucleus of the built-up area of Matera was built on a rocky spur jutting out with steep walls into the Gravina, and to the north and south of this one can distinguish two suspended valleys, dug into the calcarenite bank and furrowed by two incisions called Grabiglioni, now covered and no longer visible. These morphological conditions, linked to the decisive presence in the calcarenite bench, favored the formation of the Sasso Caveoso and the Sasso Barisano on this site, and in the 1600s there was the expansion of the town center and thus the realization of ecclesiastical structures, government and residence of the bourgeois and aristocratic classes in the Plan [17, 18]. Taking into account the singular characteristics of the context and Law No. 13 of January 9, 1989, which contains the provisions of the Minister of Public Works to eliminate and promote the overcoming of architectural barriers in public buildings, private homes and public transportation and Ministerial Decree No. 236 of 1989 by which the technical prescriptions necessary to ensure accessibility, adaptability and visitability are established, a gold route accessible to all has been traced that connects U.N.E.S.C.O. cultural heritage sites and includes: Square San Giovanni; the "Luigi Guerricchio" viewpoint known as the "Three Arches"; Vittorio Veneto Square; Beccherie Street, Cathedral Square viewpoint; Sedile Square; San Francesco Street; D. Ridola and the Piazzetta Pascoli viewpoint (Fig. 1).



Fig. 1. Study area with indication of available and accessible U.N.E.S.C.O. cultural assets and gold route.

The Sassi have an urban line called "Linea Sassi" and parking spaces for the disabled that make it possible to reach the cultural sites present, but difficulties are encountered for Piazza San Pietro Caveoso, Convento di Sant' Agostino and Casa Grotta because of their location. In particular, we can state that access to the Sassi district is characterized by stairways and ramps with a suboptimal slope of more than 8 percent, and bus stops are difficult to reach and do not allow safe boarding and alighting from public transportation for people with mobility disabilities. The paths along Fiorentini Street, Madonna delle Virtù Street, and Caesarea Street have uneven paving and often lack sidewalks or are smaller in size than required by regulations.

The node of accessibility has been addressed by the Municipality of Matera and there are partially implemented or unapproved projects that have found rejection by the Superintendence of the Basilicata Region and non-compliance with Law 11/11/1986 No. 771 bearing "Conservation and Recovery of the Sassi districts of Matera." In particular, taking into consideration the technical report on the infrastructural mesh of the Municipality of Matera for the implementation of a program for pedestrian accessibility in the Sassi districts, it is necessary to take into account the fragility of the context and the heritage of very high architectural, historical, monumental, landscape and archaeological value. Therefore, the implementation of mechanized vertical paths appears to be inconsistent with the context and the existing road system and accessibility, and it will be necessary to implement soft design solutions more in line with the context of reference.

Carrying out a careful reflection for the accessibility of the city of Matera is a great opportunity to create new landscape and cultural itineraries and make the most fragile people tell about the territories in a logic of slow rediscovery of their identities.

4 Towards a Measurable Boundary

In a consolidated settlement bound by the presence of sites of cultural interest of international importance, the design of fully accessible routes represents a challenge for the current field of urban design. Public organizations have proposed numerous measures to address the topic over the years.

Problems related to the impact of too invasive hard solutions as considered by the appropriate authorities emerge from the analyzed documents. Conflicts and issues that positively detailed and influenced the intervention approach in accordance with the genius loci developed from the elaboration of and suggestions put forth.

A first step in identifying the issues in the area is to analyze the cultural assets and the standards established to ensure accessibility to locations. In fact, part of the previously identified golden route is characterized by slopes and lift systems that are unsuitable for the transit of people with reduced mobility. As highlighted in figure two, the two main systems oriented towards tourist usability are marked by points of discontinuity and morphological characteristics which constitute a barrier to exploring the historical center. In particular, there are drop-off points of the “Sassi line” bus stop that are incompatible with fragile users.

In order to encourage inclusive mobility, the proposed scenario focuses on the redefinition of the existing itineraries according to a public circular route. Along with the rental with driver system, the mobility as stated above provides the opportunity to reach the gates of the historic core from a variety of locations and adds additional, adequately designated bus stops (Figs. 2 and 3).

The rental of specific chairs will be guaranteed with electric wheels with a number of advanced features, such as the self-balancing wheels allow the user to always maintain a correct position while driving, the third wheel and two tracks ensure users to drive on uneven terrain with ease, and above all it offers the possibility of climbing stairs thanks to the elevation of the seat. These are just a few of the planned soft actions, in the added information points whose absence was complained of. Additionally, the chair can balance on two wheels and face slopes of up to 34° thanks to gyroscope technology.

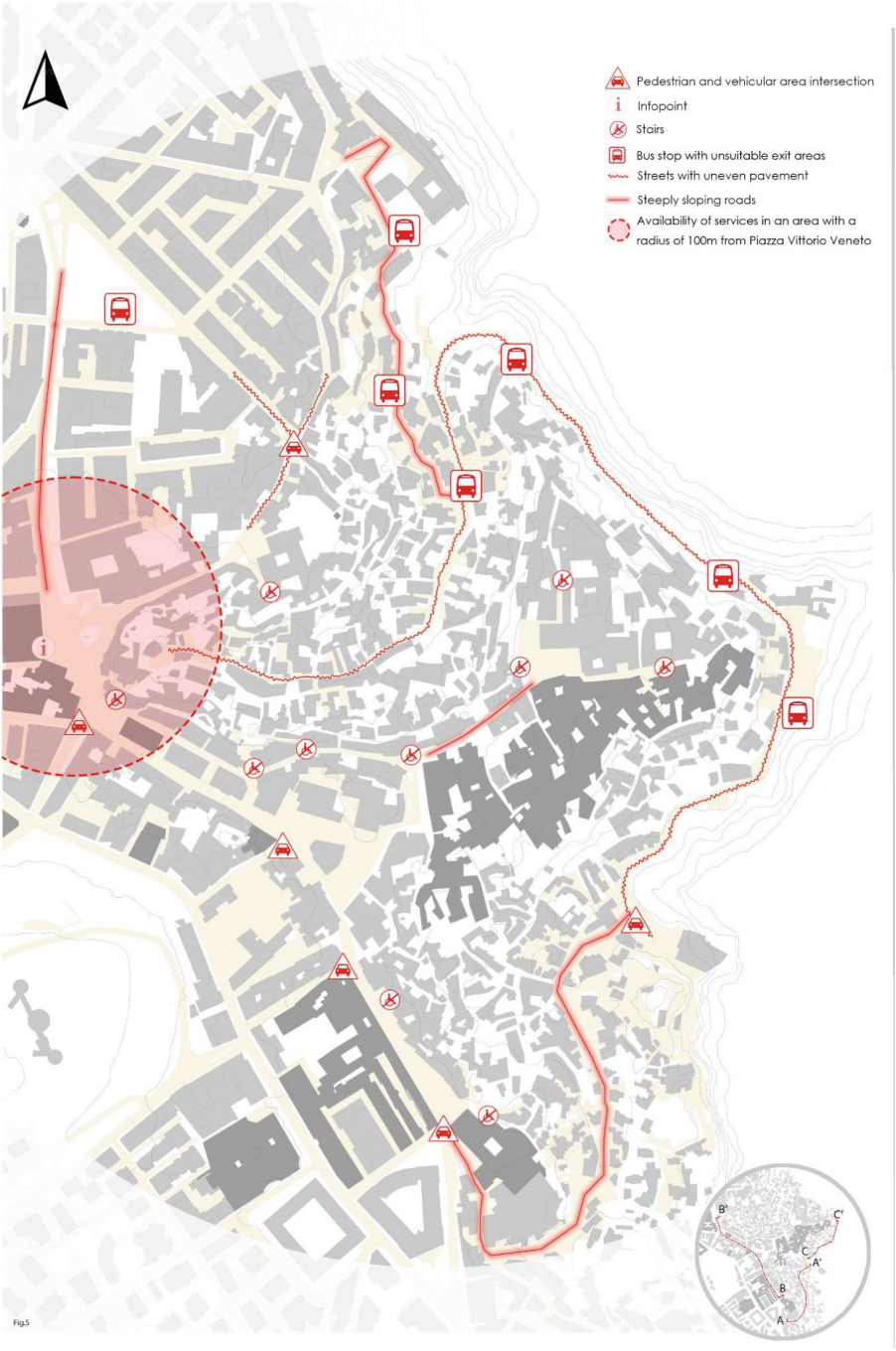

Fig. 2. Study area analysis with indication of issues.

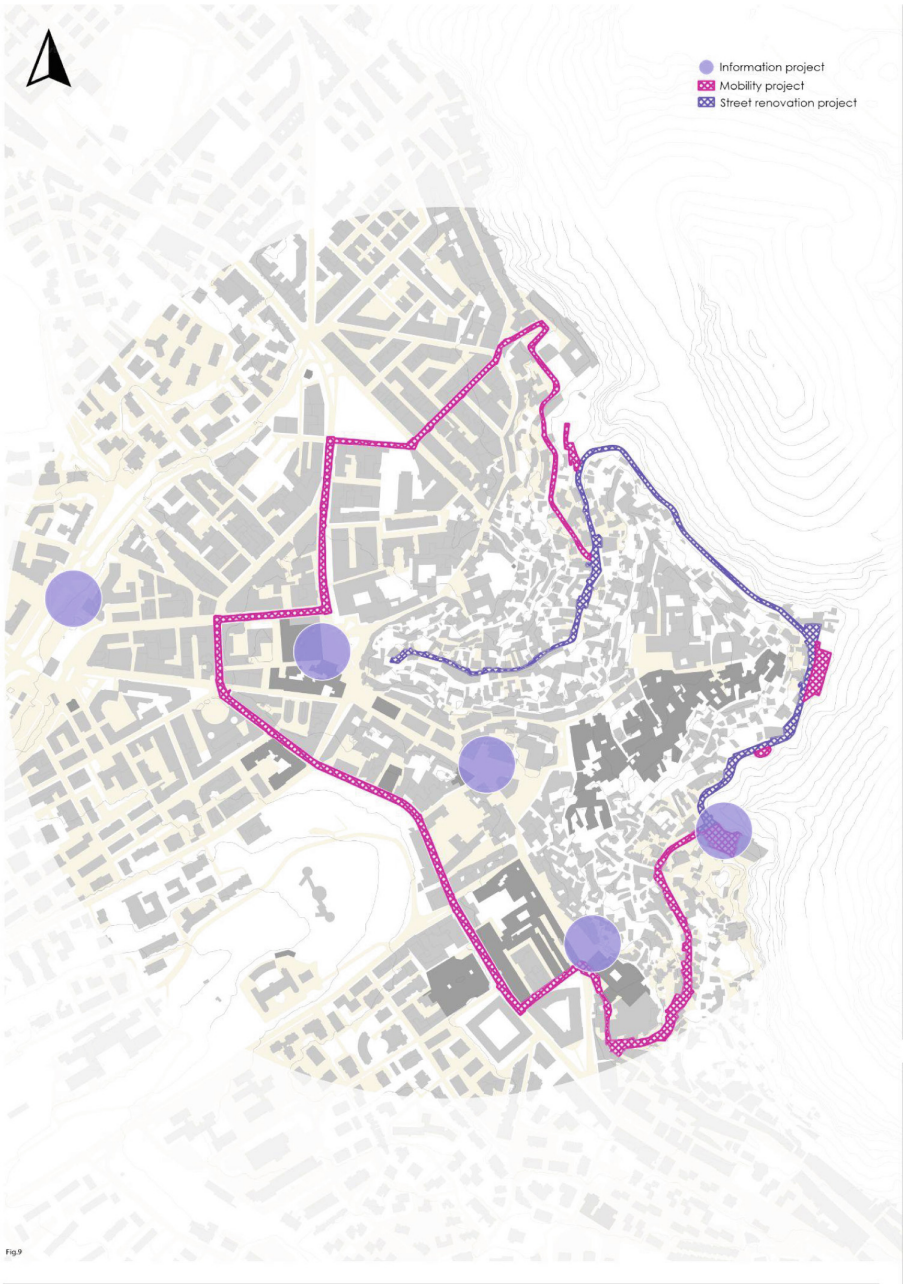

Fig. 3. Study area analysis with indication of design proposal

5 Discussions and Conclusions

The article explores a novel experimental method aimed at developing strategies for reviving urban areas in Matera, a city in the Basilicata region of Italy. The goal is to address the strategic concerns of a specific group of city users and a selected suburban area in accordance with specific criteria. The approach is founded on the principles of the National Urban Agenda (NUA), which are "downscaled" to the local level [5–7, 19–21]. The methodology commences by defining the target population of city users using the "Planning for Migrants, Ethnic Minorities, and Persons with Disabilities" principle [16]. Collaborative design frameworks are highly recommended [4, 12, 22–25], and a strong approach is required to implement such a proposal effectively. The primary focus of this study is on the emerging technical requirements of teaching the downscaled implementation of NUA principles to the next generation of territorial technicians. The research experiment has exposed several distinct advantages compared to traditional urban regeneration methods [21, 26–31]. Specifically, the project enables a more comprehensive and expansive outlook on the specific problems and issues that must be addressed, a logical process for verifying the links between problems, place conditions, and potential solutions, and a reference matrix founded on NUA principles to measure the impacts and outcomes of the proposal [32, 33]. The reference matrix's robust accounting system provides strong evidence of the design's quality. However, the study's limitations relate to the laboratory's academic dimension, which is only partially related to the procedural and administrative rules and constraints that characterize the case study. This research makes a significant contribution to the ongoing discussion on tools and methodologies [19, 20, 27, 28, 34–37] to support the downscaling of NUA to the local level, using innovative technologies in the thematic domain of urban design.

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