

Emanuele Sommariva

BICYCLE INFRASCAPES
Emanuele Sommariva

Urban regeneration and public space design

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INFRASCAPES**



LISTLAB

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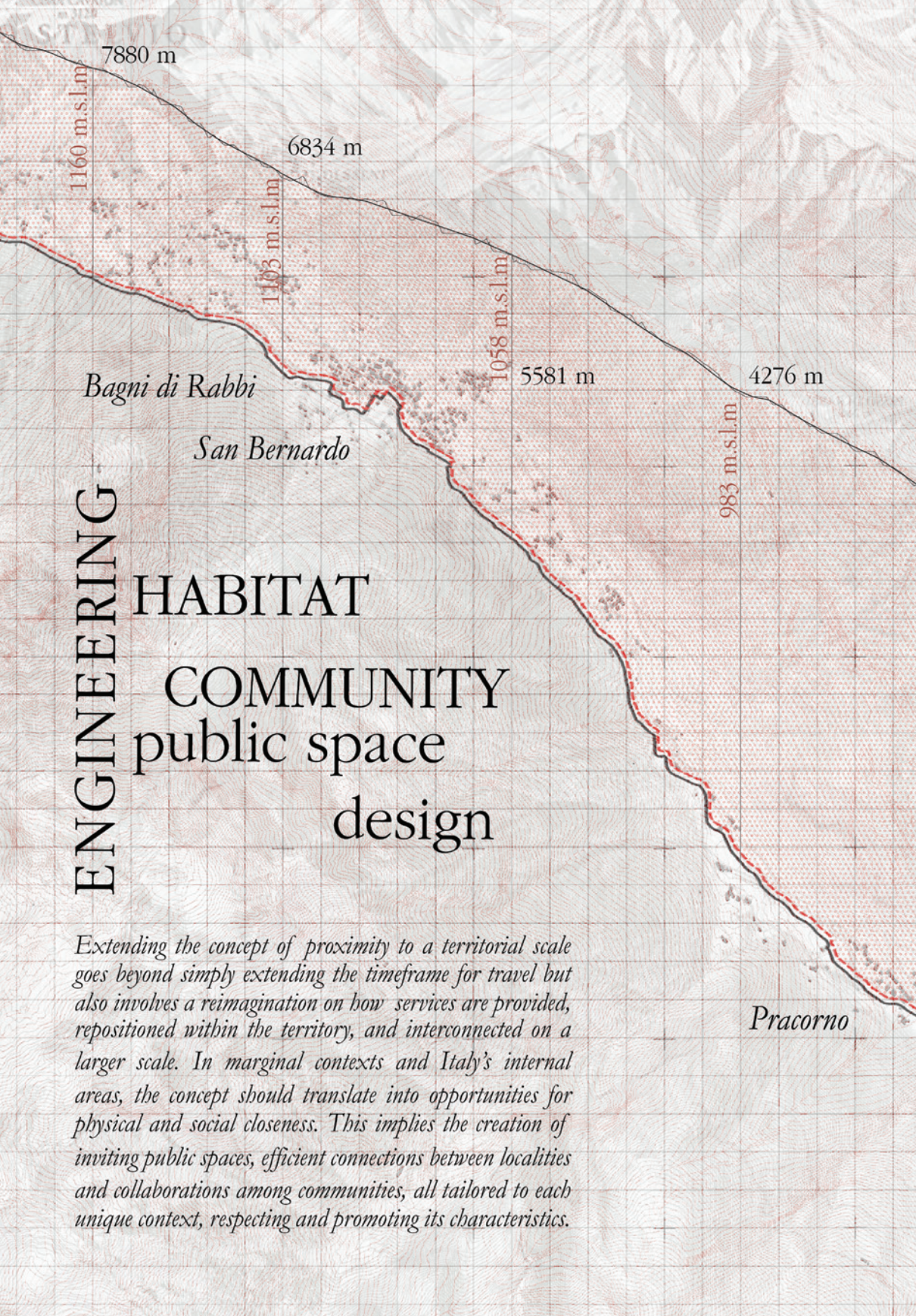
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ENGINEERING HABITAT COMMUNITY public space design

Extending the concept of proximity to a territorial scale goes beyond simply extending the timeframe for travel but also involves a reimagination on how services are provided, repositioned within the territory, and interconnected on a larger scale. In marginal contexts and Italy's internal areas, the concept should translate into opportunities for physical and social closeness. This implies the creation of inviting public spaces, efficient connections between localities and collaborations among communities, all tailored to each unique context, respecting and promoting its characteristics.

Designing slow landscapes in inner mountain territories

Sara Favargiotti, Ginevra Casellato

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Nearly two decades after the Paris Agreement, the state of the environment in which we live remains one of the major global concerns. Within the exploration of the possible ways to inhabit the world more consciously and responsibly, experiments with urban and rural landscapes play a pivotal role. These experiments face the complexity of urban realities, which can either contribute to environmental degradation or serve as virtuous hubs for interaction, creation, and socialization. Prominent among these attempts is the "proximity city" model, proposing an urban reconfiguration centered around spatial and temporal proximity as a driver for improving the quality of life for citizens and the context in which they live (Moreno, 2023). According to this vision, a more livable and high-quality city should be structured to make essential services accessible within a short travel time, encourage slow mobility, and promote the formation of supportive social networks through shared and creative spaces. The 15-minute time limit becomes the symbol of a design revolution that brings essential services closer to people, reimagines neighborhood spaces for diverse activities and tries to mend the increasingly faded relationship between inhabitants and their environment, in a virtuous cycle of urban environment usage and care (Moreno, 2020).

Extending this concept to a territorial scale goes beyond simply extending the timeframe for travel but also involves a reimagination on how these services are provided, repositioned within the territory, and interconnected on a larger scale. In marginal contexts and Italy's internal areas (SNAI, 2019), the concept of *proximity* should translate into opportunities for physical and social closeness. This implies the creation of inviting public spaces, efficient connections between localities and collaborations among communities, all tailored to each unique context, respecting and promoting its characteristics.

As one can guess in this discourse on proximity, the infrastructural project and the reasoning on how to move within the territory play a significant role. Traditional and fast means of travel, in their different declination between intramodality and integrated travel systems, often tend to draw people away from the intimate experience of places they inhabit or encounter along the way, treating them as mere passages rather than meaningful destinations, neither beginning nor end of the journey. To counteract this alienating tendency, even in vaster territories it is crucial to discuss about the potential of soft mobility as a driver of change; capillary networks of alternative trails that carefully integrates with natural contexts, proposing new perceptions in travel experience in terms of sensations, time and contact with local realities.

Moving slowly means being able to perceive the environment, look at it in more detail and establishing direct contact with it. Considering that smell and taste are anthropologically defined as "proximity senses", while

Conceptual Master-plan of the Rabbits cycle path project along the orography of the Val di Rabbi (Trentino-Alto Adige)
Graphic: Ginevra Casellato, 2022

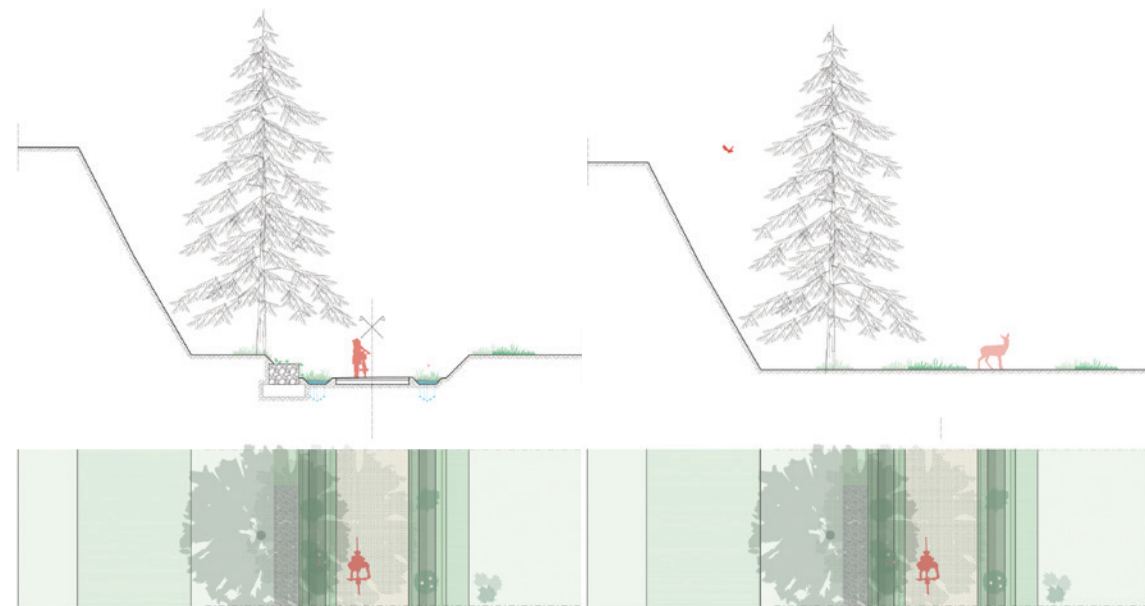
sight and hearing are “distance senses” (Treccani, 2020), it is easy to understand how the scents and flavors of the spaces through which one travels can be perceived only by immersing themselves in them firsthand. Traveling on foot or by bicycle allows a process of perceptive knowledge along the way, through all the senses.

Moreover, the time required for a slow travel, far from its usual fruition, returns to be a personal experience, following the rhythm at which we form our thoughts (Pileri, 2020). An example of a project that embraces this vision is VENTO, a 700-kilometer cycling infrastructure connecting Venice (VEN-) to Turin (-TO) along the banks of the Po river (POLIMI, 2021). VENTO entails territorial regeneration strategies to encourage site-specific reactivation projects through micro-scale interventions on abandoned heritage buildings, stations and farmlands to promote knowledge creation and new bike-along services for a diffuse tourism infrastructure in marginal inner areas. In this way the project shows a mutual development amongst local economies, place-making effects, cycle tourism, rail transit, and ecological reactivation along mere transit points. Many cases abroad show how these kinds of cycleways can trigger virtuous processes, generating employment, strengthening socio-cultural ties and identity in the crossed territories. In 2021, thanks to national, regional and municipal resources 13 sections of the path have been recovered (255 km of the entire cycleway). VENTO is the result of an action-research developed by Milan Polytechnic University contributing to the establishment of a national wide Cycling Tourism System (2016). It is a first, important step towards the consolidation of the role of bicycle infrascapes in contributing to new territorial marketing for less-favored areas in urban-rural regions.

Experiments of this kind have arisen in recent years, primarily in urban settings and then to territorially less-accessible areas. However, considering these alternatives as the most viable paths toward a more sustainable model of living, it is necessary to extend the reasoning to the more complex areas of inland Italy and mountainous territories. These ones, considered as internal and marginal areas, are characterized by different conditions of vulnerability (Favargiotti et al., 2022).

The first form of vulnerability is linked to the risks and hazards associated with natural resources such as landslides, avalanches, hydrogeological issues, and wildfires. Also, for this reason, the inhabitants of these areas maintain a unique bond with the territory, which they perceive as a both welcoming and potentially hostile environment. Another form of vulnerability is observed in relation to the tourist exploitation of these areas, regardless of their vocation and specificity. The significant increase in the number of visitors over the years, has often disrupted the balance in these zones, increasing their instability and fragility (Pasquali and Marengo, 2022). It is therefore crucial to preserve the remaining territorial resources and local traditions, promoting new forms of conscious and context-respecting tourism. Simultaneously, it is vital to maintain control over anthropogenic methods of territory utilization and management, as inappropriate practices can amplify the intensity of natural events that threaten the communities in the area.

In various European mountainous regions, sustainable tourism initiatives are emerging, adopting mobility measures focused on preserving the mountain environment. A notable example is Werfenweg, an Austrian



Diagrams with material and spatial description of the Rabbies cycle path at the junction connecting in San Bernardo.
Graphic: Ginevra Casellato, 2022

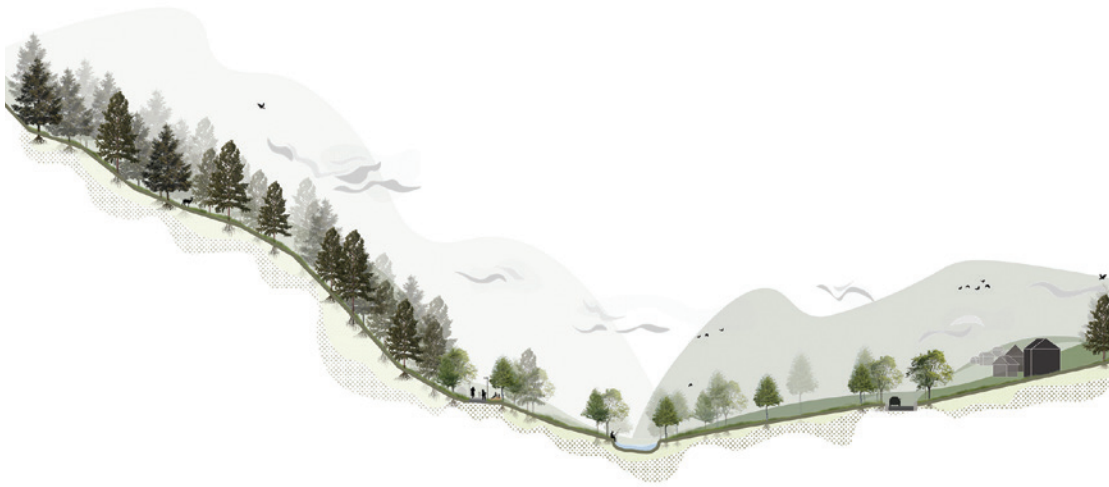
municipality in Salzburg, that proposes itself as a soft mobility model (Werfenweg, 2023). This location, accessible by train or shuttles, offers a fleet of electric vehicles powered by solar energy, as well as bicycles for local travels. The commitment to environmental respect through mobility-focused initiatives brings visitors closer to the territory and allows them to understand and experience it without the risk of harming it.

Five paradigms for slow landscapes

In the pursuit of proximity, cyclability, and considering the context vulnerability, a research-by-design proposal for a slow cycling path in the mountainous territory of Val di Rabbi (Trentino-Alto Adige, Italy) has been explored. The project revolved around five fundamental paradigms of slow landscape design: habitat, community, public space, engineering, and design. Creating a cycling path in a mountainous context first requires an understanding of the unique temporal dimensions that governs the valley's reality—a geographical, historical, and natural time, often more extended than the rhythms of urban life.

Historical time is interconnected with the traditions of the area, maintained over the years. It is marked by customs and rituals such as associations and cooperation among members of local communities for land ownership and care, a rotational system for dairy production in Val di Rabbi (AA.VV., 2017), and celebrations for the return of herds from the high pastures. The second, the time of nature, is linked to the morphology of the territory, leading to nonlinear movement upon it. It includes atmospheric phenomena that transform the valley throughout the seasons and the productive and emotional connection with the land, forests, and water—a common thread running through Val di Sole.

In these regions, proximity is not merely about defining a number of minutes to reach locations and services but rather rethinking how different nodes and facilities can be located, reactivated and linked together. It involves considering how movements can occur within space and shape the experience of it; what it means to be socially close and



Bike path diagram showing the applied strategies for landscape valorization and territorial regeneration.

Graphic: Ginevra Casellato, 2022

suggested a road marking that could also be applied to the existing Val di Sole cycle path, a graphic design that reflected the unique character of the area. The resulting project, starting from Malé, where it is proposed a revitalization of the train station area and nearby square, gradually moves into the Val di Rabbi with increasingly precise and less substantial interventions, which enhance the natural and cultural heritage without modifying it. As the path enters the Stelvio Natural Park, the goal is to guarantee an authentic experience, transitioning from surface-oriented design in the valley floor (Malé) to higher point and lines. The design of key junctions in the valley reflects the intention to create intermodal points where bikers and visitors can easily switch their mode of transportation. To further support local communities, the project directs users towards hamlets and villages through road signage and small interventions that ensure the recognition of the slow route.

connected in a vast and complex territory. To preserve the natural and historical value of the place while aligning with its tourist vocation, we aimed to design a path that traverses the valley respecting these unique characteristics.

Starting from the study and understanding of the habitat that frames the urban realities of Val di Sole, it has been suggested to trace a cycling route that connects the valley floor to Bagni di Rabbi (the last village in the valley before the Stelvio Natural Park). This path would bridge the gap between Val di Rabbi and the existing Val di Sole Cycling Track, with minimal environmental impact and respect for the context.

To involve the communities of the valley, the route includes rest areas, public spaces, and entryways in residential areas, intertwining with the urban landscape and providing essential cycling services such as bike stations, repair shops and electric charging stations.

The technical feasibility of the project has been evaluated at an engineering level, elaborating multiple layout projects of the bicycle path to validate its final route. The first step has been to acquisition of qualitative information on the various aspects of cycling mobility in the region, followed by design processes and the implementation phases of the slow route. This included visual impact analysis on landscape and the evaluation of different route planning alongside the main accessibility infrastructure (Provincial Road 86) or following the existing rural trails. In order to cope with national regulatory requirements for cycleways compared to the variability of terrains and site characteristics, the study focused on the analysis of steepness of slopes, given the necessity of minimal excavations and landscaping. Throughout the route planning phases, the direct connection to historical urban centers along the way has been maintained. Once obtained suitable planimetric alignment drawings and appropriate longitudinal profiles, the second phase of the project focused on determining type sections, including general indications of the drainage systems and support structures.

Finally, in conjunction with an architectural approach, it has been

Territorial section of Val di Rabbi within the Rabbits cycle path.

Graphic: Ginevra Casellato, 2022



In conclusion, starting from the premise that landscape knowledge is one of the primary forms of protection and participation, the intervention aims to promote such awareness towards the delicate territorial heritage of Val di Rabbi. The project has been conceived with a significant respect for local territories and natural assets towards a sustainable tourism promotion through minimal interventions in urban-rural contexts in order to promote cyclability in the whole valley; the new road signage encourage the understanding of the local iconography and dialects, which remains very relevant in the valley; the new cycle infrastructure allows integration with a natural context of rare beauty, with the necessary attention. The Rabbits cycle path takes its name from the river alongside which it runs, seeking to mimic its pattern on the ground and its flow: slow and immersed in nature.



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