This Special Issue intended to wonder about the new challenges for sustainable urban mobility, aligning with the European Sustainable & Smart Mobility Strategy. Contributions come from selected papers of the XXVI International Conference “Living and Walking in Cities” and have been collected around two main topics: the relationship between transport systems and pedestrian mobility and the transformative potential of temporary urban changes. Reflections and suggestions elaborated underline a collective great leap forward to reshaping urban mobility paradigms.

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Living and walking in cities: new challenges for sustainable urban mobility

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The exploration of tactical urbanism as a strategy for adapting to climate change. The “SpaziAttivi” program in the city of Brescia

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Abstract
Lately, conventional urban planning strategies have encountered a new and often opposing force known as Tactical Urbanism, which has gained widespread prominence. This movement represents an approach to addressing issues at the neighborhood level, intervening in public spaces through citizen involvement and implementing temporary, cost-effective solutions. The Municipality of Brescia is actively exploring this innovative approach through the “SpaziAttivi” project, a component of the Climate Transition Strategy approved in 2021. This paper aims to elucidate why tactical urbanism has been chosen as the preferred method to enhance understanding, awareness, and the adoption of a collaborative approach to addressing climate change adaptation and mitigation issues. Specifically, the paper seeks to delineate the methodological process employed in selecting areas for tactical urbanism experiments, considering other successful participatory processes in Tactical Urbanism. The selection process ultimately leading to the decision to intervene in two areas, a significant reduction from the initial 56 proposals put forth by the citizens.

Keywords
Tactical urbanism; Climate change adaptation; Participatory design.

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1. Introduction

Thanks to integration policies developed since the 1950s, harmonizing vehicular and pedestrian traffic, pedestrian environments have experienced a resurgence in popularity in recent decades (Yassin, 2019). Urban planners now recognize pedestrian spaces as integral components of urban planning, offering environmental, cultural, economic, and social benefits (Blaga, 2013). The emergence of COVID-19 has profoundly reshaped our cities, prompting significant shifts in people's behavior. With restrictions in place, individuals have found themselves spending more time engaged in activities like walking and cycling, as traditional entertainment options became limited. In fact, slow individual transport modes (walking and cycling) have proven consistent with the need for social distancing and, more generally, with the need to improve people's health and well-being (Fasolino et al., 2020). This change in habits has underscored the necessity for a reevaluation of pedestrian and cycling infrastructure, as well as the utilization of open spaces within cities (Zecca et al., 2020).

In particular, the goals of creating walkable environments and improving the walkability of urban areas span multiple disciplinary fields including urban planning, public health and climate change issues (D'Amico, 2023). Traditional planning strategies, rooted in rational methods that assumed confined spaces and linear processes for simplified and optimized interventions (Wohl, 2018), regarded the territory as a neutral platform without considering its social component, leading to project failures. Consequently, becomes more evident that there are significant correlation between the geometric attributes of urban spaces and their perception by users, providing valuable insights for designing public spaces tailored to the encountered needs (Boglietti & Tiboni, 2021). Urban planning has shifted towards more reflexive, critical, and inclusive positions, moving away from a preference for physical interventions to a focus on understanding and influencing the procedural aspects of change (Wohl, 2018).

In the literature, temporary urban interventions emerge as a potential tool for altering traditional attitudes towards spaces and behavior, fostering long-term change (Bishop & Williams, 2012; Tonkiss, 2013) introduce Tactical Urbanism as a new transformative approach, contrasting with conventional urbanism. Tactical Urbanism emphasizes an open and iterative process, efficient resource utilization, and the latent potential in social interaction. Citizens leverage tactical urbanism to draw attention to perceived deficiencies in policies and physical design, while municipal authorities, organizations, and project developers employ it to expand public involvement, test plan aspects early and often, and expedite implementation, facilitating the creation of vibrant spaces (Lydon & Garcia, 2015).

Tactical urban design interventions reclaim urban space and contribute to temperature reduction in cities, such as through pedestrianizing vehicular roads and utilizing materials that enhance sunlight reflectivity.

The Municipality of Brescia incorporates tactical urban planning interventions into the Climate Transition Strategy (CTS) (Comune di Brescia con il contributo di Fondazione Cariplo, n.d.). Approved in 2021, the CTS encompasses 30 actions for adaptation, mitigation, participation, and community involvement, aligning with medium- and long-term planning integrated with the Municipality's general and sectoral planning tools. The goal is to transform the city into an oasis, a sponge, and a people-centric urban space. Involvement and participation actions play a pivotal role in building resilient communities, increasing climate change awareness by addressing territory needs and participating in interventions to enhance the urban microclimate. Establishment of people and climate-oriented cities entails two fundamental processes within physical contexts: the revitalization of existing urban areas, with a focus on enhancing public services for each urban unit, and the strategic planning of their accessibility. Consequently, there exists a robust correlation between the objectives of people and climate-oriented initiatives and temporal and proximity perspectives (Carra et al., 2022). The "SpaziAttivi" project, as an organized participatory process, seeks to address climate mitigation and adaptation issues through a socially sensitive approach.

This paper aims to outline the methodological process for selecting areas to experiment with tactical urbanism. Through rapid and experimental implementations, spaces can be redesigned to promote climate adaptation...
and pedestrian environments, eventually leading to shared permanent realizations with the community. The article seeks to illustrate the "SpaziAttivi" participatory pathway, comparing it with other experiments in Milan and Bologna discussing the methodological approach and strengths and weaknesses for the benefit of other urban realities undertaking a similar path.

The structure of the paper is as follows: Section 2 presents virtuous examples of tactical urbanism in Milan and Bologna. Section 3 outlines the "Un Filo Naturale" project and the Climate Transition Strategy. Section 4 describes the methodology used to identify areas for tactical urbanism. Section 5 presents the results applied to the city of Brescia. Section 6 compares the "SpaziAttivi" project methodology with analyzed examples, concluding the work and discussing future developments.

2. Virtuous examples of tactical urbanism

To the best of the authors' knowledge, notable instances of successful experimentation with tactical urban planning, facilitated through collaboration with public administration, include the "Piazze Aperte" project in Milan and the establishment of school squares in Bologna. These examples were presented to participants during workshops as part of the participatory process within the "SpaziAttivi" project. The intention was to provide participants with insights into the project's objectives and methodology.

2.1 Piazze Aperte

"Piazze Aperte" is a collaborative initiative led by the Municipality of Milan in partnership with the Agenzia Mobilità Ambiente Territorio (AMAT), Bloomberg Associates, and Global Designing Cities Initiatives. The project's primary objective is to enhance public spaces as central meeting points within neighborhoods, expanding pedestrian areas and promoting sustainable forms of mobility to enhance both environmental conditions and the overall quality of life in the city (Comune di Milano, AMAT - Agenzia Mobilità Ambiente Territorio in collaborazione con Bloomberg Associates e Global Designing Cities Initiative, n.d.).

The initiative seeks to reposition public spaces at the heart of neighborhoods, transforming squares into vibrant community hubs rather than mere parking lots or transit zones. By returning these spaces to the residents, the project aims to reinstate the true essence of a "square" as a place for local interactions. Furthermore, "Piazze Aperte" represents a shift in how the municipality collaborates with city districts, fostering stronger relationships with residents who actively participate in the design process and the creation of new spaces.

The pilot projects in Piazza Dergano and Piazza Angilberto were initiated by Bloomberg Associates. Through engagement with stakeholders, these projects identified a set of initial squares, developed specific plans, and collaborated with Milan City Council departments to establish the first new squares in 2018. Throughout the temporary installations, the studio facilitated the city's assessment and monitoring of each area's impact, gathering feedback from citizens and analyzing behaviors in public squares. These analyses contribute to the eventual transformation of these spaces from temporary to permanent. By 2019, the program expanded to include ten sites across the city, reclaiming 100,000 square meters of public space, with plans for additional squares in the future.

Building on the success of the initial plaza launches, Bloomberg Associates, in conjunction with the mayor, initiated a public call for recommendations for new plazas starting in 2020. The goal is to bring lively public plazas to every corner of the city. The "Piazze Aperte" project received 65 proposals from private individuals, associations, and schools, resulting in the creation of 22 open squares (Fig.1).

2.2 School squares in Bologna

In the Municipality of Bologna, the inaugural experimental initiative of school squares was implemented in the Navile district through collaboration among the Municipality of Bologna, the Navile District, and the Fondazione
Innovazione Urbana (FIU). This project was conducted in partnership with the Politecnico di Milano and the University of Westminster as part of the European research project EX-TRA (Experimenting with City Streets to Transform Urban Mobility). Notably, the project aligns with the Plan for Emergency Pedestrianism, which seeks to explore new solutions for outdoor public spaces to address the challenges faced by individuals during the pandemic.

**Fig.1 Proposals for the "Piazze Aperte" project**

The primary focus of the Plan is to intervene in underutilized street spaces, transforming them into appealing and communal public areas, particularly catering to families, children, young people, and locations near schools. The interventions involve experimenting with alternative ways of utilizing public space through temporary arrangements that allow for diverse uses to maximize the space’s potential.

The key objectives include:
- increase the spread of neighborhoods public spaces;
- create comfortable and balanced spaces using innovative and creative street furniture;
- create new space to be used for recreational, sports and cultural functions of proximity.

The selected intervention area is Via Procaccini near the Testoni-Fioravanti schools, identified by FIU in collaboration with the Municipality’s Urban Planning Sector. The installation aimed to experiment with a new temporary pedestrian space to enhance students’ autonomy and safety during their journeys between home and school, while also providing new spaces for meetings and waiting (Comune di Bologna e FIU, Fondazione Innovazione Urbana, n.d.). FIU led the architectural design, incorporating various elements such as colored paint on the ground, street furniture like racks, semi-circular benches, games drawn on the ground, ground lettering, benches, ball and semi-sphere concrete seats, and wooden tubs containing medicinal and ornamental plants. Notably, student involvement from the Testoni-Fioravanti middle school in defining games, ground inscriptions, and project signs added a unique and valuable dimension to the architectural design process. The
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intervention spanned approximately 12 months, during which observation and monitoring activities yielded positive results in terms of space utilization and acceptance by users and residents. Building on these initial tactical experiments, Bologna has embarked on five additional interventions to enhance the city's livability, starting with school squares (Fig.2).

3. Climate Transition Strategy

The "Call for Ideas Climate Strategy" has been annually published since 2019 by the Cariplo Foundation under the "F2C - Cariplo Foundation for Climate" project, which focuses on policies combating climate change. The primary objective of this initiative is to endorse projects addressing both mitigation and adaptation to climate change through strategic and policy measures at the local level. In 2020, the city of Brescia participated in the call (resolution 315/2020) by presenting the project "Un Filo Naturale - A community participating to transform the challenge of climate change into opportunities." The development of this project occurred concurrently with the establishment of the Climate Transition Strategy (CTS) of Brescia, officially approved a year later (resolution 52/2021).
to long-term plan that complements and dovetails with the comprehensive planning and programmatic tools of the municipality.

This comprehensive project encompasses a range of actions related to adaptation, mitigation, participation, and community engagement. While some of these actions are slated for the next five years, others align with a longer-term vision, all geared towards combating escalating temperatures, addressing heatwaves, and mitigating the impacts of extreme weather events. The overarching objective of the administration is to construct a territorial system characterized by continuous and progressive efforts to reduce emissions of climate-altering gases and enhance resilience through the ongoing improvement of risk management. The CTS aims to fortify the city against climate change, adhering to models that embrace the concept of:

- **OASIS CITY**: Creating shaded and cool areas, infusing nature into urban spaces to enhance the well-being of residents and ameliorate the urban microclimate;
- **SPONGE CITY**: Facilitating the return of space to water and enhancing permeability to the earth, allowing for sustainable coexistence;
- **CITIES FOR PEOPLE**: Crafting even more livable spaces where the rights to health, communal interaction, and inclusion are safeguarded.

Integral to the success of the initiative are actions that encourage engagement and participation. These actions play a pivotal role in cultivating resilient communities. By focusing on the needs of the local territory, they not only increase awareness of climate change issues but also actively involve community members in the design of interventions aimed at improving the urban microclimate.

Within the broader framework of "Un Filo Naturale," the "SpaziAttivi" project takes center stage as a participatory process orchestrated by Urban Center Brescia. This initiative seeks to actively engage neighborhood councils, city associations, and citizens in the regeneration of urban spaces, placing the local community at the heart of the revitalization efforts.

### 4. Methodology

The "SpaziAttivi" project envisions the transformation of selected areas through citizen engagement in participatory design processes. In this approach, stakeholders actively participate in the design process to ensure that the final outcome aligns with their needs, fostering a stronger sense of community belonging. Tactical urbanism, originating as a grassroots initiative spontaneously promoted by citizens, has evolved into a tool embraced by local administrations.

The participatory approach plays a pivotal role in addressing the climate crisis, extending beyond technical and environmental solutions to promote social resilience. Citizen involvement not only raises awareness about climate change but also strengthens the community through various social initiatives, cultivating a shared sense of belonging to public spaces and, more broadly, a commitment to the well-being of the common good.

Within the "Spazi Attivi" project, small-scale urban transformation projects focused on climate resilience serve as catalysts for broader community change. The active participation of citizens in the transformation, care, and management of public spaces is the driving force behind this process. A participatory preparatory phase ensures that residents are well-informed about the project's benefits, actively engaging them in the initiative (Fassi in Orizzontale+atto, 2020). As a result, public spaces become shared assets, reinforcing a sense of belonging among those who actively contributed to the design process.

The "SpaziAttivi" project unfolds in various phases where participants, employing action research processes, identify, select, study, and propose climate adaptation and mitigation interventions for specific areas. The participatory process, initiated through meetings conducted between May and June 2023, identified unused, underutilized, or problematic public spaces. These areas are slated for transformation into active spaces through urban redevelopment, emphasizing both climate and social resilience. Workshops involving the community yielded 56 proposals, and a meticulous analysis process was employed to select the most suitable...
areas for participatory design. Despite the intricacy of handling numerous valuable proposals, this process was essential in identifying the two areas most conducive to accommodating planned activities and fulfilling the project’s objectives.

The participatory journey commenced with a public presentation outlining the primary objectives of the project, along with the schedule for “Area exploration” workshops, meticulously organized by Urban Center Brescia. These workshops, comprising five open meetings for citizens, transpired between May and June 2022, strategically spread across various city zones. The core aim was to uncover disused, underutilized, or problematic public spaces ripe for transformation into active hubs, fostering both climate and social resilience.

Participants were encouraged to envision these spaces as potential new squares for communal gatherings, small urban oases, play and relaxation zones, biodiversity gardens, rain-absorbing "sponge" areas, shaded and cool spaces, among other possibilities.

The workshops were structured around working tables equipped with city maps, facilitating a comprehensive understanding of the territory and idea exchange. Guided by the Urban Center Brescia team, participants engaged in discussions and dialogues, ultimately contributing to the completion of a proposal form for each nominated area. Proposers were prompted to provide a detailed description of the area, emphasizing physical and contextual characteristics, urban and environmental challenges, climatic vulnerabilities, and social factors. They were also encouraged to articulate potentialities and visions for the area, supported by initial ideas and accompanying visuals. In terms of social activation, proposers outlined potential subjects to be involved and identified beneficiaries of their ideas.

The culmination of each workshop featured proposers presenting their ideas, which were then placed on the city map displayed on the wall. Participants had the option to fill out the proposal form online through the municipality’s website. For those engaging in workshops, geolocation was achieved by placing a sticker on a shared map. Online submissions required participants to enter the location on the interactive map following the digital completion of the form (Fig.3).

![Fig.3 Form to be filled in for the proposal of areas](image-url)
During the exploration phase, the completion of the form served as a crucial tool for gathering data on the proposed areas, documenting their location, and elucidating the specific characteristics justifying their nomination. The 56 reports received were geolocalized and made accessible on an interactive map, published on the open-source UMAP platform (Fig.4). This mapping initiative provided a visual representation of the proposed areas and their distribution across the city.

The exploratory workshops, integral to the participatory process, witnessed a total attendance of 135, involving 97 participants in total. This engagement underscored the active involvement and interest of the community in contributing to the regeneration and transformation of urban spaces through the "SpaziAttivi" project. The diverse perspectives and inputs collected during this phase laid a robust foundation for the subsequent stages of the project, ensuring a rich and comprehensive understanding of the nominated areas and their potential for positive impact.

Of the received proposals, a diverse range of urban areas were suggested for intervention:
- 23 proposals focused on green or natural areas, intending to enhance usability and functionality;
- 7 proposals targeted industrial or disused areas;
- 7 proposals centered around squares;
- 5 proposals were related to streets;
- 4 proposals focused on car parks;
- 4 proposals involved pedestrian paths;
- 2 proposals focused on neighborhood areas;
- 2 proposals targeted areas near watercourses;
- 2 proposals aimed at minor aesthetic improvements to buildings.

The assessment of ideas prioritized climatic and environmental factors, with 22 proposed areas incorporating sustainable mobility solutions. Additionally, 12 proposals included water management systems in public space design, while 11 emphasized biodiversity in space regeneration. Seven proposals suggested de-paving strategies.

The final workshop of the exploratory phase facilitated participants' viewing of the 56 proposals through an exhibition at the Urban Center. This setting provided opportunities for discussion, commentary on the work done, and the generation of new connections among participants.
The subsequent phase involved the analysis of proposed areas’ typologies, verifying urban planning compatibility and technical feasibility. The working group conducted a quantitative analysis based on project objectives, evaluating factors such as climatic and environmental adaptation, experimentation and creativity, and community activation. These factors were assigned values reflecting their importance, leading to a ranking of proposed areas.

The ranking was later supplemented by a qualitative assessment, considering factors like the proposed area’s position in the socio-urban context, potential socio-cultural impact, and the perception of social cohesion in community involvement.

The quantitative evaluation resulted in a ranking of the proposed areas based on the scores obtained from the assessment. These scores, representing the sum of the averages of the three factors (climatic and environmental factors, experimentation and creativity, community activation), were further supplemented with the evaluation of qualitative factors, leading to a new ranking.

In a subsequent typological assessment of compatibility with project objectives, 24 out of the 56 proposals were not considered for various reasons, such as scale, inconsistency with climate goals, overlap with other projects, or impracticality of intervention. Nineteen proposals were recommended to be sent to the Environment Sector for potential green projects, while 13 areas were deemed suitable to proceed, aligning with the objectives of the "SpaziAttivi" project and sector expectations.

Following this analysis, the working group, along with the Department of Urban Planning and Planning for Sustainable Development, selected areas to proceed with design activities. A final verification of stakeholder willingness was deemed necessary through interviews with the working group, focusing on the visions and objectives of various proposals and considering the relevance of factors assessed during the quantitative evaluation of the areas (climate/environmental factor, social factor, creativity factor). Proposers raised issues that the working group deemed necessary to report to relevant municipal councilors (Mobility Policies and Institutional Services, Public Education and the Environment, Green Areas and Parks, Housing Policies and Citizen Participation).

5. Results

Urban Center Brescia, in collaboration with the Department of Urban Planning and Planning for Sustainable Development and the Head of the Urban Planning and Mobility Area, has identified four areas for potential planning activities within the "SpaziAttivi" project. Following discussions with the proposers, the results were reported to relevant municipal councilors. Subsequently, two pilot areas were selected to proceed with the upcoming phases of the "SpaziAttivi" project in the year 2023-2024.

The two selected proposals are as follows:
  − "Piazza Verde" (Fig.6): Located in the Carmine district, this area has been chosen as one of the pilot sites for the "SpaziAttivi" project;
  − "Viale Piave a colori" (Fig.5): This area, characterized by colorful elements, has also been selected as a pilot site for the project’s next phases.

Although the other two areas were not chosen for immediate planning activities, they are still deemed of interest to the administration and may be considered in future co-design and implementation processes within the "SpaziAttivi" project.

6. Discussion and conclusion

Tactical urbanism, a globally employed method of urban transformation, enables cities to swiftly alter the use of a space using temporary and cost-effective elements. This approach involves implementing reversible, accessible, and agile actions, such as colorful strips, street furniture, planters, or painted ground games. The
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effectiveness of these temporary interventions is analyzed, and the final design is adapted based on user reactions. Such quick and straightforward transformations serve to activate new dynamics and uses of space within local communities.

Comparing the case study with cited examples reveals a distinct approach to area selection. While both projects emphasize the crucial role of community involvement, the identification of experimental areas in the case study is initiated through open meetings with the community, allowing them to propose intervention areas. Subsequently, the administration becomes involved for a detailed evaluation of the areas and the finalization of interventions.

The methodology employs qualitative and quantitative analyses with objective indicators, serving as the basis for the administration's decision on the choice of intervention areas. The two identified areas will undergo listening meetings with citizens to better understand the characteristics of the places and their potential for transformation. These working tables, facilitated by experts, involve citizens and stakeholders in the design of urban requalification from a tactical urban planning perspective.

Fig. 5 “Viale Piave a colori” (Piave Avenue in colour): paved area adjacent to the entrance of two schools, which was deemed feasible for the “SpaziAttivi” project

Fig. 6 “Piazza Verde”: a pedestrian area in the historic centre adjacent to the entrance of a primary school, considered feasible for the ‘SpaziAttivi’ project
While the proposed methodology efficiently identifies suitable areas for tactical urban planning experimentation, there is room for further refinement of indicators during the methodology phases. Continuous improvement in the assessment criteria could enhance the overall effectiveness of the approach.

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Image Sources

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The exploration of tactical urbanism as a strategy for adapting to climate change. The “SpaziAttivi” program in the city of Brescia


Fig.2: Comune di Bologna e FIU (Fondazione Innovazione Urbana). (n.d.). Piazze Scolastiche a Bologna. Retrieved from: https://www.comune.bologna.it/mandato-2021-2026/azioni/cinque-nuove-piazze-scolastiche/;

Fig.3: Comune di Brescia con il contributo di Fondazione Cariplo. (n.d.). Strategia di Transizione Climatica - Un Filo Naturale - Una comunità che partecipa per trasformare la sfida del cambiamento climatico in opportunità. Retrieved from: https://www.comune.brescia.it/sites/default/files/2023-10/231005_Presentazione%20progetto%20SpaziAttivi.pdf

Fig.4: Comune di Brescia con il contributo di Fondazione Cariplo. (n.d.). Strategia di Transizione Climatica - Un Filo Naturale - Una comunità che partecipa per trasformare la sfida del cambiamento climatico in opportunità. Retrieved from: http://umap.openstreetmap.fr/en/map/spaziattivi-urban-center-brescia_768501#15/45.5277/10.2879

Fig.5: Own production

Fig.6: Own production

Author’s profile

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