URBAN RESILIENCE IN THE INNER CITY OF PRAGUE: SMÍCHOV

Salahieh Diana - Tobišková Kateřina - Koucká Michaela

ABSTRACT: In the "Czech Republic 2030 Vision" document, published in 2017 by the Department for Sustainable Development at the Czech Republic Government Office, urban resilience was a prioritized parameter for assessing urban capacity to mitigate vulnerabilities to socioeconomic and environmental perturbations. However, efforts to assess and reflect on the measures and conditions of urban resilience are somewhat lacking in the Czech context. In retrospect, this paper aims to review the resilience of a distinct inner-city neighborhood in the city of Prague: Prague-Smíchov. Methodologically, the paper begins with a review of the strategies and implementation plans for urban resilience in Prague and Smíchov's municipality, followed by a historical reading of the area's urban development and adaptability to turbulences and changes. Finally, the paper unveils a preliminary examination of Smíchov's central area contemporary urban conditions in conjunction with the walkability of its public spaces and vitality of its blue-green infrastructure. The paper highlights the need for further research to address and enhance the scope of urban resilience within the city of Prague.

KEYWORDS: resilience; urban resilience; Prague; Smíchov; walkability; blue-green infrastructure

INTRODUCTION

Urban resilience is considered an essential assessment criterion for cities' vulnerability to socioeconomic changes and their capacity for adaptation during and after shocks and stresses. The recent global crisis induced by the COVID-19 pandemic and subsequent lockdowns served as a profound moment of reflection, revealing the manifold inadequacies in design strategies. It also shed light on the strengths and weaknesses of urban environments in fulfilling fundamental physio-psychological human needs amidst constrained mobility and disrupted work-life equilibrium. This calamity served as a poignant reminder for local communities and decision-makers to instigate initiatives that bolster the adaptability, quality, and vitality of urban spaces for the present and future generations. In tandem a shifting paradigm is arising, "the power of care" as French urbanist Alice Cabaret frames it, that is urging architects and urbanists to refocus on bulletproofing the existing urban environments for a dynamic and unpredictable future. While resilient thinking has been developing in urban studies since the 1960s, frameworks for adopting resilience only became prominent around the mid of 2010s in various global agendas (e.g., the Sustainable Development Goals, the Paris Agreement, the World Humanitarian Summit Commitments to Action, and the New Urban Agenda) [17]. The polysemic nature of resilience as a concept makes it complicated to define and measure within the scientific and professional fields [42]. However, generally it has been recognized that resilience to either environmental or socioeconomic uncertainties coincides with the design of more equitable and livable cities [14].

In 2017, the "Czech Republic 2030 Vision" document was published by the Department for Sustainable Development at the Czech Republic Government Office, iterating great emphasis on urban resilience as a key factor in evaluating a city's ability to address and reduce vulnerabilities to socioeconomic and environmental disruptions. In preceding years, the Czech capital city pursued multiple efforts, drawing on strategic plans, in aim of fulfilling the goals of the Vision document. However, efforts to assess and reflect on the implementations and their impact on an urban environment's resilience continue to be viewed as challenging and difficult to grasp. Furthermore, recent attempts in Prague have largely focused on adapting a 2050 vision of resilience towards climate change.

The aim of this paper is to scrutinize how resilience is understood and planned for in Prague to highlight a critical reflection on what is lacking and needs attention in future policies and strategic plans. In the process, the authors narrowed their focus on an inner-city neighborhood, central Smíchov, due to its central location and history of urban revitalization efforts in the 1990s that transformed it from a working-class industrial neighborhood into a modern inner-city commercial hub. Smíchov stands out as an already stabilized urban center except for the ongoing development of Smíchov City in the southern part of this area holding unforeseen potential to reshape its dynamics and character. In urban studies, Smíchov's transformation has attracted much interest, yet there is a lack of reflection on its urban resilience and adaptability of its urban form in regard to meeting essential physio-psychological human needs, i.e., vital public spaces and blue-green infrastructure. Tracing central Smíchov's history while studying its present context, reveals a complex interplay on both the local dynamics and the overall fabric of the city. In this pursuit, the authors call on Prague to learn from its past and localize its strategic resilience thinking and approach.

RESEARCH METHODOLOGY

This paper begins with a brief literature review on the evolution of (urban) resilience thinking and developed urban frameworks. The work then inquires on Czech documents, strategies and implementation plans that deal with tackling urban resilience in the Czech capital city. As the authors have narrowed their research area to central Smíchov, a section will follow to examine the strategies and approaches to resilience in Prague 5 district, to which Smíchov is part of. Subsequently, a thorough historical reading of Smíchov is presented to familiarize the events and transformation that impacted the role and function of this urban context in relation to the city and its resilient adaptability.

For the case of this paper, the authors have focused on the realm of urban resilience by observing the vitality of public spaces and green infrastructure in central Smíchov. As such, with an aim to investigating walkability and vitality of public spaces in an urban hub that is equally a cultural heritage site, the authors borrowed parts of a research methodology, Interactive Walking, developed by Gisèle Gantois [18] to explore in their research. In particular, they have utilized the first step of this three-step methodology, namely "Interactive Journeys". The adoption of this approach holds manifold significance. Gantois's research methodology is rooted in an alternative reading of the deep significance of heritage sites, encouraging the researcher, often an outsider to the case study, to immerse themselves in the site. This immersive experience involves "serendipitous wandering while meticulously docu-

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menting observations and experiences in small jot booklets" [20]. Inspired by this approach, the authors sought to employ this walking and sketching method to capture the nuances of people's movements and everydayness, thereby unveiling the sense of vitality that characterizes central Smíchov.

In total, the authors conducted five site visits, two group ones (April and June 2023) and three (May and June 2023) were employed by DS at different times of the day and week. The reflections were discussed in tandem with the emotional map carried out in Prague, in 2021, withholding data about citizens' perception and experience in the city [35]. Building on the reviews and preliminary analysis, the authors conclude with a reflection on future necessary research steps.

WHAT IS RESILIENCE?

Tracing the definition of resilience within urban studies highlights the challenges of this term to capture the complexity of changes in an urban context. Ecological and engineering resilience were key concepts that developed the spectrum of resilient thinking [9]. Both perspectives, despite their disciplinary differences and rootedness in distinct traditions, converge on the fundamental belief in the presence of equilibrium within systems, whether it is a pre-existing state for resilient systems to rebound to, i.e., engineering, or a new state for them to advance towards, i.e., ecological [9]. The engineering resilience perspective is rather popular in governmental and everyday discourses, placing a significant emphasis on the concept of bounce-back-ability which in other words focuses on the return to "normal" without critically examining the underlying assumptions and implications of what constitutes "normality" [9].

In contrast to both the ecological and engineering lens, the concept of evolutionary resilience challenges the notion of equilibrium, emphasizing that systems undergo inherent changes over time, regardless of the presence or absence of external disturbances [9]; therefore, asserting that we can hardly ever return to where we were. Furthermore, Davoudi [9] connects the framework of evolutionary resilience, which at its core contextualizes places as intricate socio-spatial systems with interconnected feedback processes and operating at various scales and timeframes, with the relational understanding of spatiality, as described by Massey [28]. Framing these analogies, as Davoudi did, enriches the lens of resilience within urban planning and strategies as it highlights the necessity to incorporate the nature of spontaneity, flexibility and dynamicity of urban places and their users.

Following Davoudi's line of thinking, Sharifi and Yamagata [41] developed an adaptive approach to resilience. They implore adaptive resilience as a framework that assesses a system's capacity to mitigate socioeconomic changes based on characteristics such as flexibility, diversity, resourcefulness, and collaboration. Adaptation, in this context, refers to learning from past experiences to outline better solutions, instead of restoring the original condition [42]. Recognizing the conceptual foundation of these different resilience frameworks will guide in understanding the direction and goals planners and practitioners strive to fulfill in their strategies and implementation.

URBAN RESILIENCE AND CLIMATE CHANGE ADAPTATION

In line with the evolution of resilience theories, emerging concepts on urban resilience have developed on four main themes: vulnerability and climate change adaptation, urban and regional disaster resilience, sustainability management and institutional transformation, and the impact of the COVID-19 pandemic [1]. Urban resilience to climate change is often discussed through the implementation of various ecosystem-based measures in urban planning and structures [30]. Ecosystem-based Adaptation (EbA) is a strategic approach recognized "for adapting to climate change (while) harnessing nature-based solutions and ecosystem services" [46].

Ecosystem services can, through green and blue infrastructure, generate services at the local level, such as microclimate regulation, stormwater infiltration, and flood risk reduction, air and wastewater treatment, and recreation [2] [50]. Ecosystem-based solutions can not only be highly efficient but also budget-friendly in comparison to unpreparedness to climatic crises i.e. floods and drought. Examples include streams, lakes, reservoirs, artificial wetlands, or rainwater retention basins [13]. Ecosystem-based measures can play a crucial role in adapting society to climate change and promoting resilience [30]. Specifically, urban green infrastructure supports planning measures [25] [48] while serving for recreation, biodiversity enrichment, air purification, and water retention and storage [12]. According to the New York City Green Infrastructure Plan [6], green and blue infrastructure can be a very effective way of adapting to climate change in urban environments by reducing CO2 emissions, reducing electricity consumption, increasing air quality, relieving the demand on sewage system, and increasing the value of surrounding properties. Although ecosystem-based adaptation approaches have proven to be cost-effective [32], benefits still need to be considered in the long term. For example, the potential value of green roofs in Toronto in a citywide context saves more than $12.3 million per year, or €10.4 million, as an urban heat island adaptation tool [3].

URBAN RESILIENCE IN THE CZECH CONTEXT

The Czech Republic follows global and European leadership of Sustainable Development Goals under the United Nations, established in 2015. In 2017, the vision document "Czech Republic 2030," was published by the Office of the Government of the Czech Republic and its Department for Sustainable Development, marking a significant turning point in acknowledging the importance of resilience in the region. Serving as a strategic framework, this visionary document emphasized the role of resilient thinking to enhance the quality of life while fostering sustainable development encompassing social, economic, and environmental dimensions [21]. Understanding resilience was based on Mitchell's definition [31] as "the ability of households, societies, and nations to absorb unexpected hazards and recover from them, and at the same time to adapt positively and transform our structures and ways of life face-to-face with long-term tension, change, and uncertainty" [31]. Notably, in the dimension of 'municipalities and regions', strategic objectives were addressed for climate change concerns. As such, the document called for improved accessibility of public services, brownfield regeneration support, mitigation of urban heat island effects, and the development of infrastructure promoting active mobility for pedestrians and cyclists.

Simultaneously, numerous Czech cities and regions devised their strategies to adapt to climate change and formulated corresponding implementation plans. These regional adaptation strategies aligned with the National Strategy for Climate Change Adaptation [34], which coordinated with the EU Adaptation Strategy [7]. While some cities have initiated the implementation of specific measures, others have future projects in progress. Regardless, there is a lack of systematic approach in planning and executing these measures. This deficiency exists at both the national and regional levels, resulting in a substantial disparity between the

declarations outlined in the strategy documents and their practical implementation.

URBAN RESILIENCE IN PRAGUE

The Climate Change Adaptation Strategy of the Capital City of Prague [37], prepared by the Environment Department of the City of Prague and endorsed by the City Council in 2017, is part of their commitment to the Mayors Adapt initiative, an initiative by European cities for climate change adaptation. The vision of this strategy focused on increasing long-term resilience and reducing vulnerability of Prague to the impacts of climate change through gradual implementation of appropriate adaptation measures; consequently, safeguarding the quality of life of the city's residents. The strategy developed its objectives, based on an analysis of the present state and future projections of climate change impacts on the Prague region. Primary objectives were to reduce the negative impact of extreme temperatures, heat waves and urban heat island on the health of vulnerable groups of Prague residents. This was specified through specific actions: a) to create a functional green infrastructure system, complemented by blue-green infrastructure elements; b) to apply landscape considerations in urban planning; c) to establish and revitalize urban green spaces [8].

In response to these ambitious goals, Prague became a participant in the UNaLab project, funded under the European Union's Horizon 2020 research and innovation program, from June 2017 to November 2022, joining a consortium of ten cities across Europe and beyond [45]. In collaboration with national and international partners, workshops were conducted to pave Prague 2050 resilience vision using Nature-based Solutions (NBS). During a 2019 session a System Analysis scheme identified potential NBS sites, particularly Novy Smíchov with a specific focus on mitigating the urban-heat island effect in that area.

By utilizing the expertise of the UNaLab project and learning from other cities' experiences, Prague's representatives (The Prague Institute of Planning and Development (IPR Prague) and Prague City Hall) drafted advanced implementation plans in accordance with their climate change adaptation strategy in two-time frames, 2018-2019 and 2020-2024. Implementation plans contained specific projects and activities, however, from their examination, it is evident that they are not planned systematically. For some projects, their initial intention has little to do with adaptation to climate change, as the case of the reconstruction of gardeners' building in Grebovka park. The distribution of projects on the territory of Prague is also not proportional, nor does it directly reflect the heat islands of the city (see Figure 1).

It is important to mention the existence of the Climate Plan of the capital Prague until 2030 with the subtitle Prague on the way to carbon neutrality. The vision is towards sustainable energy and transport, a circular economy, and a climate-adapted city. It wants to achieve the latter by improving microclimatic conditions, reducing the impact of extreme hydrological phenomena, adapting buildings and public spaces, and at the same time improving preparedness in the area of crisis management. However, no specific measures are listed in the implementation part of the document [38].

URBAN RESILIENCE IN PRAGUE 5 – SMÍCHOV

Upon analyzing strategic documents and actions related to Prague 5 - Smíchov, the district lacks adequate measures for building and defining urban resilience. In terms of community engagement and social cohesion, there is a notable absence of projects that promote inclusive governance and effectively address the diverse needs of various groups. According to the City of Prague's strategy on climate change and related activities, the primary focus appears to be on green infrastructure and nature-based solutions. However, surprisingly, considering its status as one of the largest districts, there is a scarcity of blue-green infrastructure measures, as adaptation measures, in public spaces. The few existing projects primarily serve as pilot reconstructions with added pro-climate functions.

The central area of Smíchov, which encompasses the bustling transportation hub around the Anděl metro station, underwent development in the early 21st century. It is intriguing to contemplate why the entire area was not designed in a more sustainable and climate-change-resilient manner, especially considering that architects and urban planners of that time were well aware of the global sustainable goals and the threat posed by the climate change crisis [43]. Apart from a limited number of planted trees and a pioneering green roof on the shopping mall at Anděl, there are minimal observable sustainable solutions in place. Referring to the Urban Heat Vulnerability Index (UHVI) map, several vulnerable areas can be identified, with the five most vulnerable locations including the vicinity of the Anděl metro station in Prague 5 (see Figure 1). This area serves as a convergence point for tram, car, and pedestrian traffic. While the area appears open and well-maintained, it lacks preparation and adequate adaptation to climate change, thereby rendering it highly vulnerable according to the UHVI map [43]. The pedestrian area is less than 5000 m2, with a limited number of small trees that provide insufficient screening, and the absence of permeable surfaces exacerbates the vulnerability of the space.

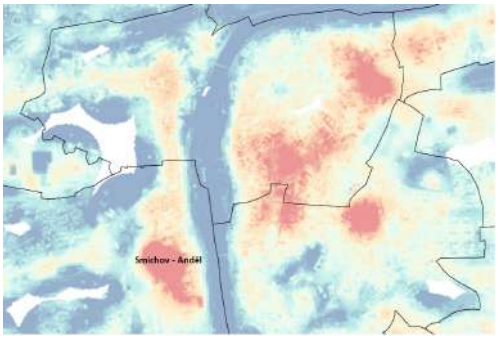

Fig. 1.: Map of the Urban Thermal Vulnerability Index in Prague. Vulnerability is represented on a scale of 0-10 from lowest to highest. The highest vulnerability is shown in red. (Source: Czech Globe, 2017; Capital City of Prague Climate Change Adaptation Strategy, 2023.)

HISTORICAL DEVELOPMENT OF SMÍCHOV (PRAGUE 5)

To evaluate the level of resilience of Smíchov in an informed manner, we must take a deep yet brief dive into its history highlighting its past capacity to drastic changes, transformations, and natural disasters. Over the centuries, the area faced several fundamental threats, largely due to its location outside the historical fortifications of Prague and at the same time near the Vltava River and smaller Motol and Radlice streams. Such menacing included raids by troops, floods, industrialization, and related health problems of the inhabitants.

The area of Smíchova today belongs to the Prague 5 district (one of the largest in Prague, with an area of 27.49 km²). On its territory, there are many green areas – for example Santoška Garden, Mrázovka Park, Sacré Coeur Park and Kinsky garden). These are the remains of the original vineyards and agricultural areas typical for the village of Smíchov, founded in 1380. Smíchov was an agricultural area with fields, vine-

yards, and hop fields, complemented by homesteads scattered over the hills. The peak medieval development of Smíchov located along today's Štefánikova and Nádražní streets going from the city walls (built in the 14th century and later expanded at the turn of the 17th and 18th centuries) and the Újezd gate, was one of the most frequented entrances to the city. The popularity of Smíchov among the courtiers and the absence of police power by the city magistrates caused the gradual transformation of the village into a recreational area with residences and ornamental gardens of families such as the Slavats, Kounits, Defours, Clam Gallas, or Kinsky [23].

Due to its frail defense, Prague was often besieged and Smíchov´s vineyards, ornamental gardens, and buildings were repeatedly destroyed during attempts to recapture Prague – for example by the Pasovský campaign in 1611 [36]. The Thirty Years War then led to eradication of viticulture and hops from the area so fields for the production of grain and vegetables appeared instead. In 1757 Smíchov hills were used as firing positions as part of the Prussian siege of Prague, and the Újezd gate was besieged too. Even though there were only 8 landowners after this conflict, the area recovered quickly and in 1782 there were 84 townspeople and peasants.

In the middle of the 18th century, manufacturers producing leather, fabric, and "Lyon goods" were built on the site of the devastated gardens as a harbinger of the massive industrialization of the area in the first half 19th century. At Maria Theresa's wish, a botanical garden was founded here in 1775 – unfortunately, located in a floodplain, which was repeatedly destroyed by floods in 1784, 1799, 1824 and 1845 at the end of the 19th century it was moved under Slupská stráň to Nové Město [29].

The 19th century – eventful tides

The development of industrialization was quite fast in the Smíchov area. Even though, in the first third of the 19th century, most of the local population made a living from farming in the fields and gardens, already in the middle of the century factory operations began to predominate, located mainly on land near the banks of the Vltava River including factories of the textile, chemical, and food industry. The volume and distribution of industry at Smíchov in the 19th century are illustrated by Václava Horčáková's reconstruction map. The arrival of the Czech Western Railway in 1862 caused a rapid acceleration of the industrialization process of the area and its economic prosperity.

At the same time, summer houses and their gardens were disappearing from the area giving way to factory operations, development of residential buildings along Štefánikova and Nádražní Streets, public buildings and also to emergency housing near farmyards. The last representative garden in the area remained the Kinský garden. It was transformed from a derelict vineyard into a park with a villa in the 1820s [23].

However, with the growing population, health problems were increasing. In 1866, Prague was occupied for more than a month by the Prussian army, which was associated with the last major cholera epidemic. These epidemics were caused by the pollution of drinking water in wells (often in connection with floods) and were complicated by the absence of a hospital in the locality, as it was forbidden to transport such infectious patients. Poor sanitation also resulted in smallpox epidemics (the largest between 1873-6). A slight improvement was brought only by the Smíchov waterworks built in 1872, which provided filtered water from the Vltava. Only in 1913 was drinking water brought to Smíchov from the Káran waterworks complex [24].

The floods did not mean only the threat of diseases, but also significant interventions in the construction fund. In particular, mills and factories located on the then unregulated and gradually sloping bank of the Vltava were regularly damaged (floods in 1845, 1862, 1872, and especially 1890). Also the buildings in the vicinity of the Motol and Radlice brooks were repeatedly flooded. The solution came with the canalization of streams, as well as the regulation of the Vltava and the related construction of river banks (in Smíchov since 1874). However, Smíchov recovered even from these problems. Floods were usually followed by a construction boom. Lucrative residential buildings were built on the site of the original botanical garden and after the construction of the river banks, the city began to face the river. A villa colony also emerged in the west of the area.

The economic crisis of the 1870s accelerated the demise of local smaller operations, replaced by residential development but also marked an opportunity for Ringhoffer's railroad freight car factory which became the largest wagon factory in Austria-Hungary. The demolition of the Prague fortifications (in the area of Kinský Square) in 1891-2, on the other hand, did not bring about the proposed transformation of the area (ring road, park). Due to a lack of funds of the municipality, construction plots were created here and subsidized the preparation of the land for construction with the collected money, resulting in a compact block connecting Smíchov with Malá Strana.

The 20th century – transformative revitalization

In the 20th century (due to the excess demand for housing oversupply) the area became the location of emergency workers' colonies. Which represents the worst kind of worker's housing during its era. In 1922 Smíchov became a part of Prague. The bombing of Prague at the end of World War II fortunately had marginal damage to the district. From the middle of the 20th century, the city spread far beyond the borders of Smíchov and the area became an important transit hub for Prague public transport.

Because of that, various radical solutions related to the issue of transport have been proposed in the Smíchov area, and the architects anticipated the widespread demolition of many buildings. Various plans proposed creating a system of east-west and north-south high-capacity car routes through the area. But only three transport structures were implemented: the subway B with the station Moskevská/Anděl (1979-1985), the Strahov tunnel (1985-1997) and the connection of V Botanice and Kartouzská streets. All these realizations were connected with the large-scale demolition of several blocks of flats, often the oldest buildings in Smíchov.

The Golden Angel building from 1994-2000, designed by Jean Nouvel, became a symbol of the transformation of Smíchov into a modern district of the 21st c. It is located at the main Smíchovská intersection of Nádražní and Plzeňská streets at the exit from the Anděl metro station. Thanks to this realization, Smíchov got onto the imaginary map of modern architecture. Crucial was also the privatization of apartment buildings in 1989 which intensified the gentrification of the area. The demolition of the former Ringhoffer factory (between 1996 and 1999) was a crucial step for the construction industry in the area – shopping Centre OC Nový Smíchov, office centers such as Anděl Park Smíchov, Anděl City and various accommodation structures appeared in its place [23]. The area of the former Buštěhrad railway station between Ostravského, Radlická and Nádražní streets, extending to Smíchov railway station, then became a development area where the project Smíchov City is currently under construction.

URBAN RESILIENCE READING OF CENTRAL SMÍCHOV

To begin with, group site visits of the case study were

aimed at visiting the surrounding parks that can be reached within walking distance from central Smíchov, such as Sacre Coeur, Na Skalce park, and Mrázovka park. The objective of such walking visits were to observe the vitality of the green spaces and the (walkable) accessibility to them. Visiting these spaces was also an attempt to witness the traces of the once green lush gardens, vineyards, and orchards that Smíchov luxuriously possessed before its industrialization (19th c.) and urban revitalization (20th c.).

The parks in question have limited and peculiar accessibility, as in the case of Sacre Coeur, which can be reached via a pedestrian bridge through the Novy Smíchov shopping mall. Despite their varying levels of maintenance and their favorable topographic features that offer picturesque viewpoints, the parks appeared noticeably empty. Furthermore, the parks exhibited an assortment of interventions and historical elements, ranging from gazebos and meandering pathways to monuments and incompatible colorful playgrounds. This mishmash of elements dilutes and obscures the parks' distinctive sense of identity and sense of place, leaving an impression of a confused experience.

Interactive Journeys

The following site visitors attempted to read the case study in more depth by utilizing Step 1. Interactive Journeys from the Interactive Walking research methodology (see Figure 2.). The goal was to maneuver slowly, taking the time in sketching, while observing the atmosphere and character of the urban landscape, in relation to the movement of people and their activities. In addition, such a method allowed the researcher to "merge with the way that local people traverse their familiar environment and unconsciously appropriate it" [19]. Furthermore, one of Gantois's aims is to abstract local meaning through interactions with 'undisclosed protagonists'. The authors were challenged in this context as no such interactions occurred during the application of this method.

a choreographed disarray. All sorts of people can be found here, each enacting their different ideals and beliefs within this urban space.

In that sense, the Golden Angel remains a thriving center, drawing in a constant stream of energy and activity and solidifying its role as a bustling hub for commerce, work, transportation, and social engagement. Its flagship status penetrates that it was and still is a product of 'powerful place-marketing instrument', displaying an urban image of successful development and urban life [44]. By leading the charge in the physical revitalization of Smíchov, assuming a position of prominence as a local symbol, drawing the attention of the media and investors, while fostering a fruitful collaboration between private and public entities [44], it is arguable that the Golden Angel instills a sense of assurance in fortifying the resilience of central Smíchov. Notably, however, within the vicinity of the Golden Angel, a conspicuous presence of police cars and officers permeates, indicating a prioritized need for security and control. Instances of police intervention with homeless individuals and drug users highlight ongoing concerns. Regardless of these expositions, the streets around the Golden Angel were bursting with constant movement and life. Foreign languages were often overheard, indicating the centrality of this location for foreign businesses and tourists.

The area around the bus station, despite its lesser activity compared to the rest of the study case, raises the most confusion during the site visits. Its atmosphere has been recently transfigured with the emergence of a new installation called Manifesto. Manifesto is a pop-up project that proposes to utilize and (temporarily) transform brownfields and idle areas into 'a next-generation food market hall brand' [26]. It recently opened its third stage in central Smíchov, Anděl, where there used to be a low-cost Vietnamese market and restaurant. It is unclear at this point how and why Manifesto managed to intervene in a space that was

Fig. 2.: Map of central Smíchov and study area. (Source: Authors, 2023.)

Arriving at the case study through the metro and exiting at E7, leads to an open pedestrian space just underneath the Golden Angel building, one of the busiest spots in Andel, busily occupied by various activities. This urban space captivates with its vibrant atmosphere, enhanced by the presence of inter-changing musical performances and stalls brimming with fresh early summer fruits tempting the hurrying pedestrians. Corners are crammed with jumbled electric scooters and rental bikes. Trams are endlessly gliding left, right, south and north. People are flowing like

neither a brownfield nor idle. However, recognizing that Smíchov City is under development it could make sense that this location will be significantly altered in the upcoming years.

In sum, navigating the streets of central Smíchov reveal conflicted and negotiated layers of architecture, use of urban spaces and interactions of social groups. Remnants from the industrial age, pop-up hipster interventions matched with the condensed mixture from the 20th c., characterize the unique mosaic of this central

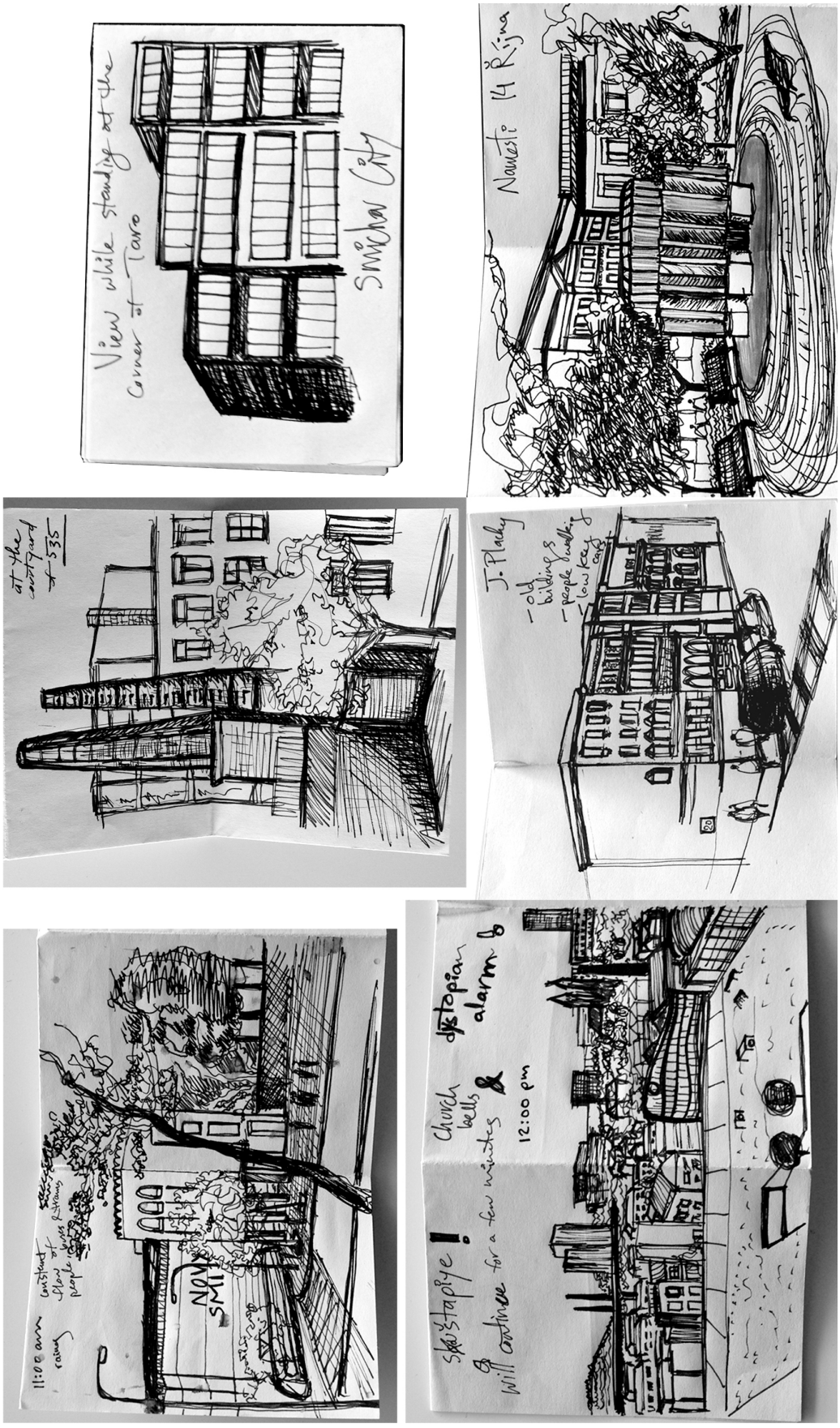

Fig. 3.: Sketches during the Interactive Journeys in central Smíchov, June 2023. (Source: Authors, 2023.)

area. Yet maintaining urban diversity clearly derives challenges to which future urban developments, such as Smíchov City, must consider to ensuring social and urban resilience without the dilution of urban character, sense of place and social diversity.

The Emotional Map of Smíchov

Data from participatory emotional mapping in Prague was collected through an online platform between April and September 2021, offering valuable insights into the diverse experiences and perceptions of citizens across various districts of the city [35]. In the case of Prague 5 district, 322 people participated and indicated a crucial assessment of the area with regard to its public spaces, traffic and overall condition. While some aspects were obvious such as the sense of frus-

tration in the teeming Anděl junction with waves of trams and people, a lot of comments highlighted a serious sense of disturbance and danger with the abundance of 'suspicious' people. This repeated term was associated with drug addicts, drunks and the homeless, specifically found near the bus station, the public parks such as Na Skalce and Mrázovka park, and the vicinity of St. Václav Church.

Despite recent revitalization efforts, Mrázovka park's reputation as a place for drug addicts persists, impacting its usage and overall image. Furthermore, locals expressed their concern with the lack of performance streets have within harsh climatic conditions. Several comments also point out how Manifesto stands as a symbol of consumerism, in which a communal or green space is highly favored.

REFLECTION ON FINDINGS

The preliminary reading of central Smíchov by tracing its history, overviewing of its municipal approach to resilience, and walking its streets in the present day, has shown the complex and demanding nature of dealing with such a diverse and dynamic urban context. Smíchov's history has portrayed the cathartic transformations this place has witnessed throughout the centuries. The location of central Smíchov in the past fulfilled several essential roles. From the turn of the 18th and 19th centuries it was economically the richest settlement in the vicinity of Prague thanks to the local railway and factory production.

Currently, the area not only serves as an integral part of Prague's transportation system but also functions as a secondary center for business, social life, commerce, and culture. These historical transformations, aligned with current urban status, embark Smíchov as one of Prague's essential urban images. Despite Smíchov's central position in Prague, adaptation strategies and implementation plans don't truly reflect on its status as one of the most vulnerable areas to climate change. Blue-green infrastructure and adaptation solutions are not systematically implemented in Smíchov.

FUTURE RESEARCH DIRECTIONS

During the Ambition Workshop in 2018, depicting Prague's reality regarding implementing NBS, it was emphasized that the city's administration is seen as complex, involving multiple stakeholders, and lacking an economic approach, thus hindering a comprehensive sustainable urban approach [10]. Consequently, solutions within the city often focus on addressing single issues due to a fragmented, sectoral arrangement [10].

However, as Prague continues its journey towards acquiring NBS, it does not stand alone in facing multiple barriers during the implementation processes. For example, Sarabi et al. [39] reviewed the case of three (frontier) cities (Tampere, Eindhoven and Genova), involved in the UNaLab project, and their common difficulties, signaling the overall, arguably, frailty of implementing NBS. In line with the discovered barriers, the authors reflect and recommend three essential research steps to pursue effective resilience planning in Prague.

Examine and adapt existing indicators
Prague in recent years has developed multiple plans and strategies with strong claims and visions yet continues to fall short in integrating monitoring measures and appropriate prioritization of measures and projects. While recent reports, [15] [49], exemplify the expanding knowledge base in NBS monitoring and evaluation, there remains a significant gap in effectively integrating these valuable insights and diverse measures by local practitioners across European cities [39]. Furthermore, it is critical to adapt these standardized metrics for Prague to facilitate implementation and effectively measure the multidimensional impacts of NBS across different scales and social-ecological scenarios [40].

Explore alternative methods and approaches
Public participation and co-creation knowledge tools are endorsed within the processes of NBS. Often, they are carried out through formal calls and workshops, appealing to citizens who are already active in public realms and disregarding underrepresented social groups. This calls for innovative methods that capture the experiences and needs of different social groups whose problems are often forgotten. The method of Interactive Walking, while it was partially employed in this paper, holds that potential to absorb deep information about urban sites while embracing interactions with 'undisclosed protagonists'. However, as evident the failure of interactions with locals necessitates exploring and combination of other research methods that work with the Czech cultural context. The emotional mapping tool was a creative approach that can be further analyzed and implored to get a closer look at citizen's needs and perspectives.

Reconceptualize resilience strategies: towards a context-based and interconnected approach
The failure to consider synergies and trade-offs between the interconnected challenges of climate change, biodiversity protection, and human well-being hampers progress in achieving targets by 2030 [40]. Furthermore, major systemic change is needed in interdisciplinary research, communication, institution organization, and economic thinking to fully integrate Nature-based Solutions (NbS) as solutions to the climate and biodiversity crises within safe biophysical limits [40]. The authors advocate for a reconceptualization framework in the Czech context which represents a progressive approach and transition towards a dynamic, multi-faceted, and place-specific notion' [1]. This paper concludes with the necessity to develop and execute simpler, effective implementation processes.

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