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City as Flux: Interrogating the Changing Nature of Urban Change

Editor
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Editorial

City as Flux: Interrogating the Changing Nature of Urban Change

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Abstract
What do we mean by the changing nature of urban change? First of all, in the 20th and 21st centuries, cities have been changing in different and dramatic ways, whether through grassroots mobilizations, through technological leaps, or through profit-driven speculations. Second, our understanding of how cities change has also been evolving, in particularly through empirical work that challenges the broad-brush universalizations of conventional thinking. The authors of the six selected articles take us through an around-the-world tour of cities and regions that range from Mulhouse in France to Dakar in Senegal to Las Vegas in the United States to Bogota in Colombia and beyond. Each author carefully examines the nature of urban change and how planners, developers, and citizens are either dealing with that change or even shaping it. Together, what the articles suggest is that we need a more fine-grained understanding of the city as flux in order to obtain better theoretical insights as well as urban practices that can better manage and ultimately shape urban change to benefit citizens, especially those who are marginalized.

Keywords
city as flux; urban change; urban practice; urban transformation

Issue
This editorial is part of the issue "City as Flux: Interrogating the Changing Nature of Urban Change" edited by Aseem Inam (Cardiff University).

1. Introduction

Urbanists—particularly those with backgrounds in professional fields like architecture, landscape architecture, urban design, and city planning—tend to be trained to view the city as an object that is planned, designed, and built according to definitive visions. In reality, the city is constantly changing at different timescales: by the hour, the week, the year, the decade, and the century. Thus, while urban geographers and historians have studied change for quite a while, such thinking has not yet permeated the world of urban practice in a meaningful manner. What would be the benefits if urbanism, both as an object of study and as a mode of practice, were to be approached from the perspective of flux rather than just an object? Why would such a reversal of ontological priorities be helpful? It would be helpful for three reasons.

First, it would enable researchers to obtain a more complete understanding of the micro-processes of urban change at work. For example, to understand urbanism more accurately, one must allow for emergence and surprise; that is, one must consider the possibility of urbanism having ramifications and implications beyond those initially imagined. Second, as well as not knowing much about the micro-processes of change, we often do not know enough about how change is actually accomplished. In order to understand this, we would need analysis of urbanism that was fine-grained enough to show how change was accomplished on the ground; that is, how ideas were translated into action, and by so doing, how they got modified, adapted, and changed. Third, a major cause of dissatisfaction with the traditional approach to change—the approach that gives priority to stability and treats change as an epiphenomenon—is paradigmatic. Strategies for change that are informed by that view often do not produce change, let alone transformation.

2. Overview of the Thematic Issue

The six selected articles in this thematic issue address these matters in a variety of ways. In the opening article,

"Agents of Change in the Domestic Built Environment," Fani Kostourou (2022) adopts a more historical perspective by discussing the intent and context of the agents involved in the construction and transformation of the Cité Ouvrière in Mulhouse, in eastern France, from the mid-19th century until now. With 1,253 houses built for the workers of a textile factory between 1853 and 1897, Cité Ouvrière was the largest employer-constructed housing scheme of its time and established a precedent for many other European towns. Through what I would call an illuminating case study, Kostourou identifies the levels at which spatial agents operate, the means they use to instigate change, their dynamic relations, and the ways these are influenced by the wider historical context. One significant insight that she provides through this research is what she calls the "rotation of spatial agency" (Kostourou, 2022, p. 17). In this case, mutual monitoring and collaboration occurred between the private housing association of the Société Mulhousienne des Cités Ouvrières, who dominated the conception and making of the scheme, and the inhabitants, who drove its transformation over time. Such "rotation of spatial agency" allowed for the transformation of a low-rise uniform suburban settlement into a dense, socially diverse and heterogeneous city quarter.

Subsequent articles examine the phenomenon of "city as flux" in more contemporary periods. For example, in "How Does Water Behave? Unstable Milieu and Stable *Agencements* in Dakar's Flooded Suburbs," Romain Leclercq (2022) draws from the literature on assemblage to understand how people deal with untamed waters in flooded neighborhoods and at the city scale in Dakar based on ethnographic fieldwork conducted between 2015 and 2019. Leclerq frames the ways in which people deal with the different behaviors of the water in terms of specific "agencements" (i.e., composites of collective strategies and action that are oriented toward the solving of a problem). The first type is what he calls the "backfilling agencement," which is oriented toward the containment of water outside the house, and which tends to favor wealthier households that have enough money to elevate their houses. The second one is "co-produced flood response service," such as the motor-pumping of stagnant water, which is carried out through inter-individual negotiations with representatives of local governmental and non-governmental organizations. The third and related agencement is the "urban forum agencement," which gathers experts, dwellers, and decision-makers in order to collectively explore a problem and to reach a decision for a solution at the city scale. The fourth type is what he calls the "international slum service platform," which links international and national services to local demands in precarious neighborhoods through on-going negotiations and partnerships. By documenting, analyzing, and naming the different types of behaviors of water in the suburbs of Dakar as well as the responses in the form of agencements, the article contributes to an understanding of cities as constantly changing and precarious milieus.

In urbanism, there has been a great deal of interest in "in-between" spaces for many years. In "The Changing Nature of *In-Between* Spaces in the Transformation Process of Cities," Magdalena Rembeza and Aleksandra Sas-Bojarska (2022) propose what they call a new approach for tapping into the potential of in-between spaces as public spaces based on landscape architecture, green/blue infrastructure, artistic strategies, and universal design in public spaces. In-between spaces are variously understood to be those spaces that are in-between purposefully designed structures and spaces and that are residual, under-utilized, and often deteriorating. The scale, scope, and benefits of possible actions based on this new approach are illustrated through three case studies: Turia Gardens in Valencia, Spain; Vistula River Boulevards in Warsaw, Poland; and Brooklyn Bridge Park in New York City, USA. Rembeza and Sas-Bojarska suggest that through this new approach, as demonstrated in the case studies, in-between spaces can become attractive and usable public spaces that contribute to the overall transformation of a city.

In some ways echoing the article on "Fits-and-Starts" later on in this issue, the article by Kevin Muldoon-Smith and Leo Moreton (2022) on "Planning Adaptation: Accommodating Complexity in the Built Environment" begins by discussing obsolescence and vacancy as parts of the traditional building life cycle, as tenants leave properties and move to new ones, a type of flux that they consider rightfully to be part of a building's DNA. What is new is structural disruptions, such as the Covid-19 global pandemic, tend to accelerate this type of flux. The question is: How does planning, in this case in England in the UK, deal with such flux? Findings based on interviews with a sample of local authority planners, combined with an institutional analysis of planning practice since the 1947 Town and Country Planning Act, suggest that the discipline of planning in England is struggling with the reality of flux. Muldoon-Smith and Moreton situate their findings in a new reading of the complex adaptive systems literature, arguing that planning practice needs to embrace uncertainty, rather than eradicate it, in order to enable adaptation to ongoing and sometimes large-scale flux in the material city. The argument is that those involved in building adaptation (e.g., planners, developers, landlords, tenants) should revisit the spirit of the 1947 Town and Country Planning Act to create a planning system that is nimble yet rigorous enough to facilitate timely adaptation to accommodate and support dynamic change in the material city.

The article "Fits-and-Starts: The Changing Nature of the Material City" by Aseem Inam (2022) pushes our understanding of cities in flux much further by examining one type of prominent urban change—"fits-and-starts"—which is concentrated in space and time and that nonetheless has high economic and environmental costs. The case study in Las Vegas is

particularly fascinating because as a city of apparent extremes, it not only reveals in clear relief phenomena that are present in the capitalist city, but it also offers insights into basic patterns of decision-making that actually shape—or design—it. Part one of the case study examines the overall fits-and-starts type of urban change between 1993 and 2016 on the famed Las Vegas Strip, and part two examines more in-depth the decision-making behind radical changes on one of the sites on the Strip, which is the Desert Inn, subsequently replaced by the Wynn Las Vegas casino-hotel-resort complex. In a highly accelerated version of the fits-and-starts urban change that many contemporary cities experience, Las Vegas demolished much of its recent history with the implosions of 13 casinos, hotels, and resorts on the Strip—the Dunes, Landmark, Hacienda, Sands, Aladdin, El Rancho, Desert Inn, Boardwalk, Bourbon Street, New Frontier, Stardust, Clarion, and Riviera—and these were soon replaced by some of the new icons, such as the Bellagio, Venetian, Mandalay Bay, Planet Hollywood, Wynn, and City Center. Based on a review of the literature and original field research, Inam provides two major insights into how human perception and decision-making drives this type of fits-and-starts urban change in cities of capitalism in the USA and elsewhere, which are manufactured obsolescence and future speculation. Manufactured obsolescence occurs when a building is only a few decades old and is structurally and functionally sound but is made to appear outdated and unsatisfactory for present and future needs by real estate agents, private investors, property owners, and real estate developers. Future speculation is not only a corollary of manufactured obsolescence but also what often pushes for such type of obsolescence in the first place and is about formulating expectations about the future—and higher—return on investment.

The final article in this thematic issue, "Change by Activism: Insurgency, Autonomy and Political Activism in Potosí-Jerusalén, Bogotá, Colombia," by Juan Usubillaga (2022), directly addresses how innovative urban practices deal with the changing nature of urban change. The type of practices the article focuses on are social movements and political activists that are rising up and inhabiting urban spaces as sites of contestation as they constantly face spatial manifestations of power. Usubillaga contributes to ongoing discussions on the role of activism in the field of urbanism by engaging with two concepts that have emerged particularly from the global south—insurgency and autonomy. Through a historical account of the building of the Potosí-Jerusalén neighborhood in Bogotá in the 1980s, it illustrates how both concepts can provide new insight into urban change by activism. On the one hand, the concept of insurgency helps unpack a mode of bottom-up action that inaugurates political spaces of contestation with the state, while autonomy helps reveal the complex nature of political action and the visions of urban transformation it entails. Such experiences from cities of the global south are essential for challenging the traditional primacy of urban theory that is produced in the global north. The building of Potosí in Bogotá is not an isolated or exceptional phenomenon but rather part of larger struggles that tend to be marginalized in the way change is conceptualized and thus has to be brought into conversation with different experiences in other cities, which this thematic issue endeavors to do.

3. Conclusion

This thematic issue of *Urban Planning* on the topic "City as Flux: Interrogating the Changing Nature of Urban Change" invited scholars who not only study urban change but are also interested in matters of practice, including those that can lead to meaningful change such as fundamental urban transformation. Authors were encouraged to present research that not only challenges our conventional understanding of the city as a static object, but also enables our understanding of how urban change actually occurs. The thematic issue thus offers a series of valuable empirical insights as well as theoretical implications for different modes of practice that engage directly with urban change. Collectively, then, what the articles in this issue suggest is that to truly understand the city as flux and the changing nature of urban change, future research should try to have three primary objectives. One is to be theoretically rigorous, especially by drawing recent research from a variety of disciplines and sources that defies conventional thinking. The second is to be empirical and contextually-grounded such that we understand how phenomena of urban change operate in different cities over time. Third, is to draw lessons that could be generalizable (rather than universal), in the sense of a representative situation that can bring together instances sharing some properties (e.g., urban change in contemporary cities of capitalism, in cities of the global south, in cities with highly regulated planning systems). We invite you to join the critical public conversation in this issue.

Conflict of Interests

The author declares no conflict of interests.

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Aseem Inam (PhD) is the inaugural chair in urban design and professor at Cardiff University, and founding director of the research-based practice TRULAB: Laboratory for Designing Urban Transformation. He is the author of the books *Planning for the Unplanned* and *Designing Urban Transformation*. He has carried out numerous funded research projects and published peer-reviewed scholarly articles in international journals on urbanism, urban practice, and urban transformation. He has practiced as an award-winning urbanist in Brazil, Canada, France, Greece, India, Morocco, the United Kingdom, and the United States.

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Article

Agents of Change in the Domestic Built Environment

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Abstract
As our cities age, a large number of spatial structures experience physical change. A better understanding of what this process may entail and the agents involved in it can extend the knowledge of practitioners, activists, and policy experts regarding the resilience of our domestic building stock and cities. Awan et al. (2013) explain that agents are not entirely free from societal and spatial constraints; instead, they are characterised by intent, shaped by their own visions and actions, and context, the spatial and social structures of which they are part and which they negotiate. This article discusses the intent and context of the agents involved in the construction and transformation of the Cité Ouvrière in Mulhouse in Eastern France from the mid-19th century to date. With 1,253 houses built for the workers of the Dollfus-Mieg et Compagnie (DMC) textile factory between 1853 and 1897, Cité Ouvrière was the largest and most successful employer-constructed housing scheme of its time, setting an example for many other European company towns. Through this exceptional case study, the article identifies the levels at which spatial agents operate, the means they use to instigate change, their dynamic relations, and the ways these are influenced by the wider historical context while influencing the making and evolution of the built form. Using historical and archival documents, it amounts to recognise an interplay of individuals and public and private groups, who have been responsible for taking decisions at different scales—the city, the neighbourhood, and the houses—and have instigated changes of different effect—from more localised to more aggregate.

Keywords
actor-network; built environment; Cité Ouvrière; historical longitudinal study; Mulhouse; spatial agency; urban change

Issue
This article is part of the issue "City as Flux: Interrogating the Changing Nature of Urban Change" edited by Aseem Inam (Cardiff University).

1. Introduction

As our built environment ages, the forms and infrastructures of our cities undergo a constant process of physical change (demolitions, adaptations, extensions, typological mutations, etc.) due to various functional, political, socio-economic, cultural, ideological, and technological developments. Although in my work I have already explored some of the spatial manifestations of such processes, looking, for example, at the densification of houses (Kostourou, 2021) or the formal adaptability of streets, buildings, and plots (Kostourou, 2020), it is worth focusing here on the human—individual and collective—agents involved in these processes of change. Foregrounding the means of change instrumentalised by these agents and the dynamic and evolving relationships between them over time can significantly expand the current understanding of architects, planners, activists, and policy experts with regards to the impact of their decisions on the resilience of our building stock and cities in the longer term.

"Agency" is defined here as the ability of individuals and social entities "to intervene in the world, or to refrain from such intervention, with the effect of influencing a specific process or state of affairs" (Giddens, 1984, p. 14). In their book, Nishat Awan, Tatjana Schneider, and Jeremy Till (Awan et al., 2013) adopt sociologist Anthony Giddens' take on agency, further explaining that spatial agents are not entirely free from societal and spatial constraints, but they have the power to negotiate these while engaging with their spatial environment. The authors identify two main features in agents: (1) the

intent shaped by their own visions and actions; and (2) the context, meaning the spatial and social structures of which the agents are part of and which they negotiate.

In this article, I wish to discuss the intent and context of the spatial agents involved in the construction and transformation of the 19th-century Cité Ouvrière in Mulhouse, in Eastern France (Figure 1). With 1,253 houses built for the workers of the Dollfus-Mieg et Compagnie (DMC) textile factory between 1853 and 1897, Cité Ouvrière was the largest and most successful employer-constructed housing scheme of its time. As I will show, it set an example for many other European company towns, on account of its social innovations, a new housing typology, and a financial model that provided workers with subsidised access to property.

The article will discuss which agents have been associated and engaged with the specific housing scheme and how they have affected its formation and transformation to the present. Relying on historical and archival documents, the research seeks to highlight combinations of different public and private groups and individuals that have influenced social and spatial structures at different scales, from the level of the city and the neighbourhood to the level of individual buildings and plots.

2. Spatial Agency

While Awan et al. (2013) have created an extensive repository of examples of spatial agency, grouping "the motivations (why?), locations (where?) and means (how?) of Spatial Agency…[and] opening up to an international network of spatial agents" (Schneider & Till, n.d.), they have not explored the dynamic and complex relationships between different spatial agents in one location through time. In social theory, Bruno Latour (2005) has famously developed the concept of "actor-network theory'' as a way to describe the ever-shifting connections and interactions between different social, technical, or scientific structures; in other words, networks of relations between objects—human and non-human—as well as between ideas and processes. One of the most accessible application of that approach in architectural theory can be found in the work of Albena Yaneva (2012), who has traced well-known debates around contested sites like the Olympic Stadium in London or the Welsh Parliament in Cardiff, challenging any static understanding of such ecosystems beyond what is visible to the naked eye. Before that, urban morphologist Jeremy Whitehand (1992) had discussed spatial agents involved in the development of urban landscapes. Taking as an example the city of Birmingham, he had detected the agents of local government, individuals and families, religious bodies, societies, and private enterprises (Figure 2). He found that in institutional and public areas the dominant agents were the local municipality and business elite, and in residential areas there were the landowners (individuals and the municipality), developers (architects, craftsmen, merchants, traders, etc.), and builders. During certain periods in the history of the city, such as the inter-war period (1919–1938), decision-making on all three elements of urban form (streets, buildings, and plots) were in the same hands: the owners and the developer-builders. Ultimately, Whitehand distinguished spatial agents based on the role they perform, i.e., owners, architects, builders; the degree of concentration in decision-making, associating, for instance, the concentration of authority with uniformity in the design; and, lastly, the type of activities, particularly between corporate or public and individual or private. The latter distinction had already been identified by Michael R. G. Conzen (1988) who argued that corporate initiatives formed the layout of medieval towns which individual initiatives transformed later until the late 19th century.

Embedded within the idea of agency are the drivers of change—or else, intent—which include larger forces such as changes in the economy, politics, or

Figure 1. View of the western part of Cité Ouvrière (Rue des Oiseaux) from the bell tower of Saint-Joseph church in 1901 (left) and 2017 (right), photographed using the same vantage point. Source: Archives de Mulhouse collection (left) and Luc Georges (right); edited by the author.

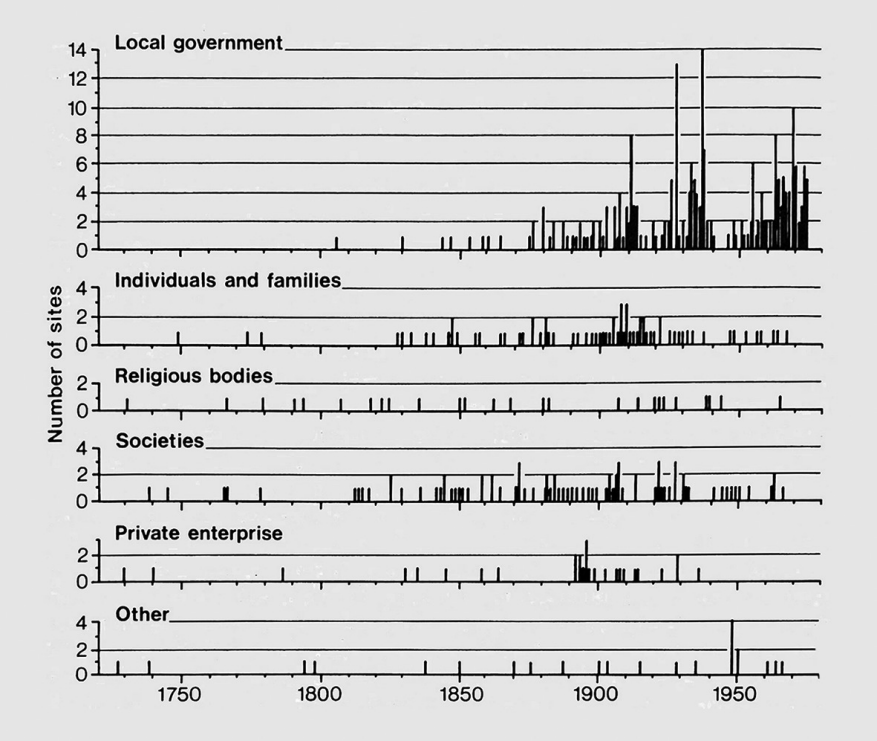

Figure 2. Agents developing institutional and public areas in Birmingham from 1730 to 1973. Source: Whitehand (1992, p. 94).

technology (Brand, 1994; Steadman, 2014; Whitehand, 1992). Equally, social factors like birth rates, migration, shared ideas, lifestyles, and habits have the power to construct spatial cultures that produce distinctive spatial milieus (Hillier, 1989; Kropf, 2001). The relationship between socio-economic and physical changes is explained well by Spiro Kostof (1992, p. 292): "Urban process represents the adjustment of the urban fabric to a whole variety of changes that are economic and social. These changes are often swifter and more deep-seated than the pace and range of physical change."

Literature draws our attention to the means (how) and reasons (why) spatial agents may instigate changes in the built environment, the wider context in which they operate, and the dynamic relationship between the two as well as the agents themselves. What follows is a longitudinal exploration of these questions using the Cité Ouvrière in Mulhouse as a case study. The article looks at the conditions associated with the initial development of the housing scheme in the city and its subsequent transformation over a substantial period of time, i.e., more than 160 years. The article does not only discuss the agents responsible for changes in the scheme at different stages but also situates them within the wider historical context they have been operating all this time, while also referring to circumstantial socio-political ideologies and technical innovations. Although the study is contextual, more generalised lessons which are useful for urban planners, policy makers, private developers, individual citizens, and activists working and living in the built environment can be extracted in the end.

3. Context

In France, *cités ouvrières* (working-class settlements) were introduced by Napoleon III after he came to power in 1848. It was just at that time that the movement of Social Catholicism, which had been strongly supporting the housing reform since the beginning of the century, gained significant ground. Napoleon sponsored low-income housing to pacify the masses and to win a favourable reputation for the imperial regime. Meanwhile, the bourgeois industrialists embarked on grand worker-improvement schemes to portray their paternalistic benevolence as welfare assistance (Clement, 2018; de Gier, 2014; Kostourou, 2019). Although the various decision-makers shared a common objective—to rebuild society and especially its working-class section through the provision of housing—they differed on their approach to achieve that (Shapiro, 1985). Specifically, Napoleon III and Haussmann advocated for programmes of public works, the hygiene professionals demanded tighter health laws, and the socialists lobbied to secure state intervention and limit private speculation.

3.1. The Mulhousian Model

Outside Paris, Mulhouse was one of the few French cities featuring a conjunction of favourable conditions that allowed it to respond promptly to the housing question of the time. Situated in the Alsatian region of Eastern France, close to Switzerland and Germany, the city always had a special relationship with its neighbouring

countries. It was one of the 10 free imperial cities of the Holy Roman Empire; then, it became an autonomous Calvinist republic in 1347, allied to Swiss cantons from 1515 until its reunion with France in 1798 under a rather favourable treaty. This long tradition of the city as a self-ruling entity as well as its strategic position between three "powers" helped the city to grow richer during the Thirty Years' War between the Protestant and Catholic states (1618–1648), and to invest its accumulated capital into industry. Effectively, it featured both a political and an economic "*extraterritoriality*" (legal ability to exercise authority beyond the normal boundaries) mainly because of the Protestant, liberal, and entrepreneurial spirit of its local bourgeoisie (Jonas, 1994). In the words of a local literature teacher, Emile Boissière (1876, p. 48, translation by the author), "Mulhouse was a city of men's initiative, who handled municipal affairs alone without asking for anything from the government other than the time to do so."

This political independence and Reformist theological tradition nourished the city's industrialisation (Stoerkel & Vitoux, 2018). While the Industrial Revolution was timid in the rest of the country, Mulhouse experienced radical and rapid economic growth at the end of 18th and beginning of 19th centuries based largely on textile industries. With 55 factories within and outside its walls in 1830, the city soon became known as "the industrial capital of Alsace," the "city of hundred chimneys" inspired by Engelmann's lithograph (Figure 3), or the "French Manchester" due to the example set by the British city (Scheurer & Lehni, 1990). Indeed, Mulhousian factories pioneered the textile printing industry (*impression sur étoffes*), especially artistic calico printing, and the development of mechanical cotton spinning and weaving (Schmitt & Jenkins, 1982).

The industrialisation process was launched, designed, and run entirely by a small group of Protestants, Freemasons, paternalistic bourgeois manufacturers yet philanthropists, who dominated the municipal cabinet and favoured the reformist agenda. Historian William Clement (2018) explains how the same elite families, such as Dollfus and Koechlin, had ruled the city-republic, founded the first factories, and monopolised political posts (until 1871, all mayors were Protestant industrialists), perpetuating a strong "fabricantocracy" for centuries. Their role was twofold: As individuals, they were interested in the accumulation of capital and the expansion of their private businesses; meanwhile, they sought to form associations and engage in philanthropic activities to retain the power of the bourgeoisie. In 1826, they founded the Société Industrielle de Mulhouse (Mulhouse Industrial Society [SIM]) to

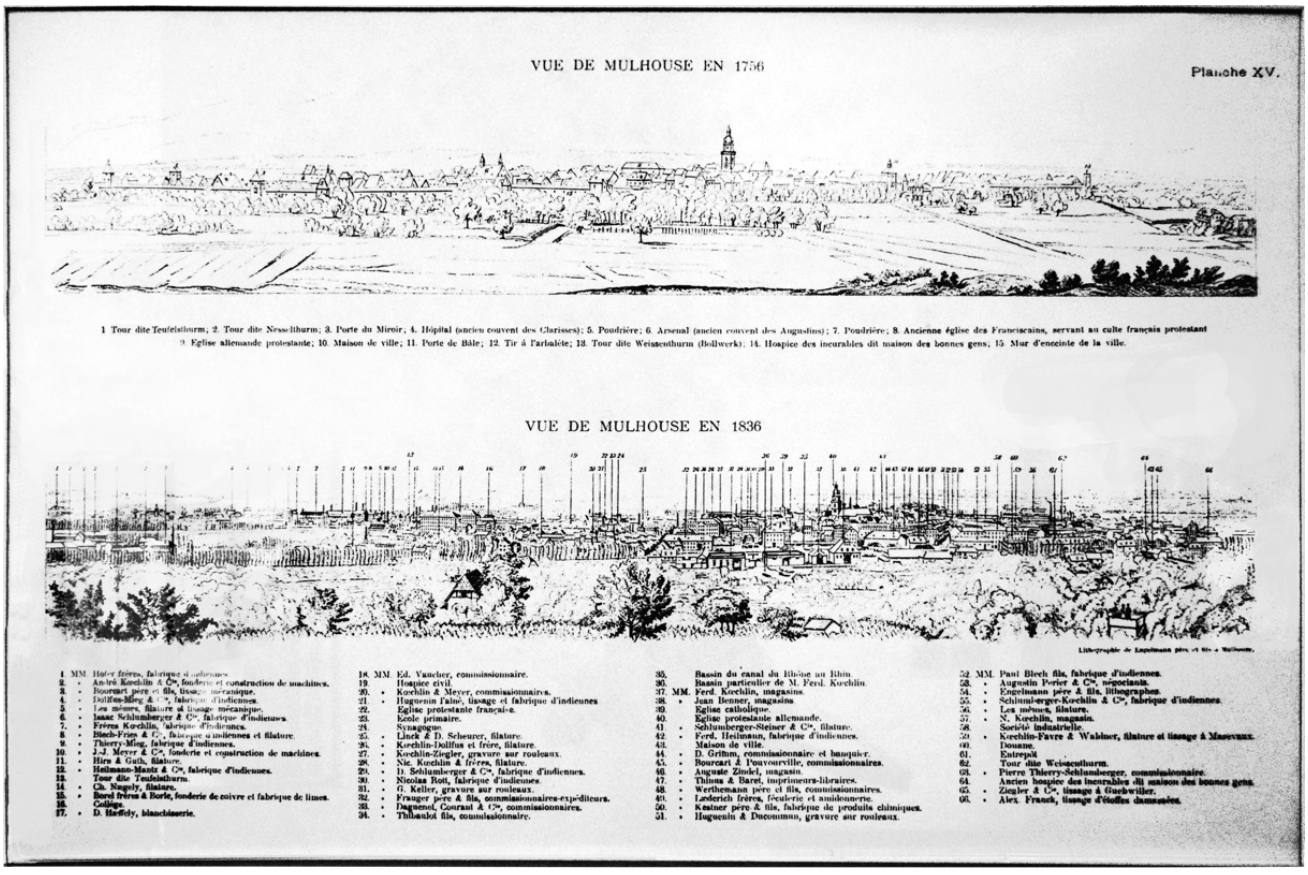

Figure 3. View of Mulhouse in 1756 and 1836. Lithograph by Godefroy Engelmann indicating the geographical location of all the factories and the civic buildings in Mulhouse and its peri-urban territory. The image illustrates the radical growth of the city during the First Industrial Revolution. Source: Musée de l'Impression sur Étoffes collection.

advance manufacturing and agricultural industries, to promote scientific research and vocational training, and to instil in the working class basic liberal values such as love for work, frugality, and education (Jonas, 1994). Twenty-seven years later, they established the Société Mulhousienne des Cités Ouvrières (Mulhouse Society for Working-Class Housing [SOMCO]) to meet the demographic pressure as a result of the industrial boom. They also undertook charity work for poor and malnourished workers by setting up welfare childcare facilities, savings banks, a public school—even before the adoption of the Guizot law on compulsory primary education—as well as the first National Institution of Higher Learning in Chemistry in France.

In that sense, their philanthropy exceeded paternalism for they aimed to improve workers' lives, emancipating them from their supervision and control. This resulted in a Mulhousian model that was very distinct and ahead of its time in combining public and private initiatives. It relied on three pillars: the entrepreneurial spirit of Protestant employers, the involvement of municipal organisations, and the contribution of the working-class, all in the search for a better social balance (Figure 4).

3.2. The Cité Ouvrière Model

Under these circumstances, Cité Ouvrière was built between 1853 and 1897 for the workers of the DMC textile factory. The project was funded by SOMCO on the initiative of Jean Dollfus—head of DMC and mayor of Mulhouse between 1863 and 1869—with contributions from the municipality and the state (only for the first phase of the development). The philanthropic endeavour was a response to the poor living conditions of the working class, surveyed and reported by Dr. Louis René Villermé in 1840, Dr. Achille Penot in 1843, and Louis Reybaud in 1858 (Jonas, 2003). The objective was to offer workers salutary, comfortable, and affordable housing and the opportunity to access homeownership after a period of 13 to 15 years. The three-phased construction lasted 44 years, producing a homogeneous array of 1,253 low-rise, single-family dwellings (back-to-back, terraced, semi-detached, and quarter-detached typologies) with gardens and a few collective facilities.

3.2.1. The Realisation of a Utopia and Inventive Pragmatism

Cité Ouvrière started as a *projet idéal* (Jonas, 2003, p. 116), a utopian project conceived by the architect Emile Müller with consultations from SOMCO and SIM to shape the moral and spiritual qualities of the working class through its architectural and urban design. For example, by providing gardens on each plot, Müller sought to serve the reformist idea that a "*jardin ouvrier minimum*" (small garden for workers; Véron, 1866, p. 16) would keep the men away from the cabarets and the entire household would spend time on growing vegetables to provide daily food and improve their income (Simon, 1861). From a formal perspective, the design of *projet idéal* was based on three key ideas: First, a central square would constitute the spatial and social centre of the settlement; second, a relatively high number of streets in combination with single-family typologies with direct access to them would help reducing overcrowding by keeping families separate, serving the hygienic ideas of housing reform; and third, uniformity in the urban and architectural plan would reflect the concentration of authority by the industrialists and mirror the streamlined layout of the factory. From a socio-economic perspective, the project sought to provide innovative—for the time—amenities such as public baths, a communal house with rooms

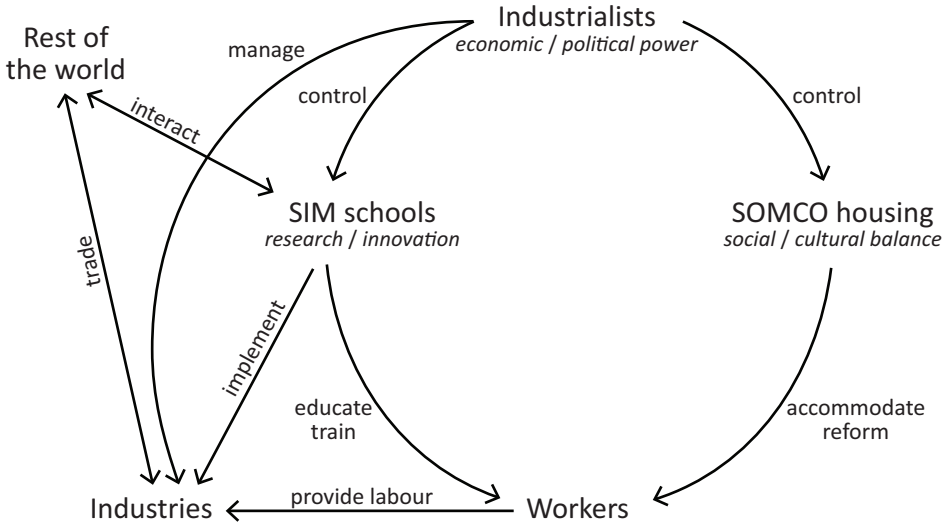

Figure 4. Diagram of the Mulhousian social model, featuring the agents and their relations. Source: Author's work, based on M. Fou's diagram (https://commons.wikimedia.org/wiki/File:Modele_mulhousien.png).

for meeting, reading, and learning, laundry, butchery, and the Société de Consommation des Cités Ouvrières (Society of Consumers in Working-Class Housing), a cooperatively-led business which traded locally baked goods, groceries, clothes, etc., to initiate the workers into the domestic habits of the bourgeoisie (Garner, 1992). It was believed that these benefits would enhance the production routine and shape the social and cultural capital of the local working class (Jonas, 2003; Penot, 1867).

Eventually, the *projet idéal* was not realised to its full extent, due to limitations on available funds—especially from the state—and the low demand of workers for houses at the time of the construction. Although some of the original ideals were compromised in the pursuit of financial practicality, this does not imply that the first *cité* (Figure 5) failed to constitute a pioneering workers' housing scheme. In fact, most of the public amenities and formal ideas were realised, making this a testbed for financially partnering the public and private sector, developing a financial model to access property, applying advanced hygienic measures, testing new domestic built forms, and promoting an innovative social model and welfare work policy. Besides the communal facilities, the first *cité* also offered a pension scheme, mutual aid provisions, free medical services, and a vocational training school (de Gier, 2014).

Interestingly, the two subsequent phases were less ambitious than the first one, both as urban, social, and economic models. Soon after the project began, SOMCO struggled to sell or rent houses from the first *cité* because of the economic crisis of 1853–1856. Furthermore, after the Franco-Prussian War of 1870, Mulhouse was annexed to the German Empire, which saw the abandonment of the previous welfare work policies. Public funding was no longer available and SOMCO had to pay fully for the public infrastructure, such as the provision of public squares, the expansion and transformation of the public baths and laundries, the installation of sewage system, and the construction of new streets (Jonas, 2003). Meanwhile, the project attracted other private developers in the area who started to offer workers alternative low-cost accommodations in nearby locations. These goaded SOMCO into making adjustments in the operational model; for example, they allowed the subleasing of part of the houses and adapted the housing prices according to the changing wages of the workers. As the sociologist Stéphane Jonas (2003, p. 115) argues, these decisions showed the "inventive pragmatism" of SOMCO and Dollfus, meaning an empiricism of common sense that led them to adjust the project in response to political changes, the city's industrialisation and growth, and the lessons learned from the outcomes of the first experiment.

Spatially, these decisions had little bearing on the street form, but a greater impact on the built form. In view of the financial struggles and market competition, the association and the architect decided to shrink and standardise the houses and reduce their typological variety and floor area (Figure 6). Gradually, the image of the Cité became more monotonous. During the third and last development phase, the built form changed again. The successor to Jean Dollfus as the head of SOMCO, Alfred Dollfus, decided to provide, unlike his predecessor, taller and larger houses for affluent workers who could sublet parts of them to unskilled workers to generate income. Interestingly, Jonas (2003) claims that SOMCO halted the construction of smaller and cheaper houses, susceptible to extensive adaptations by the inhabitants

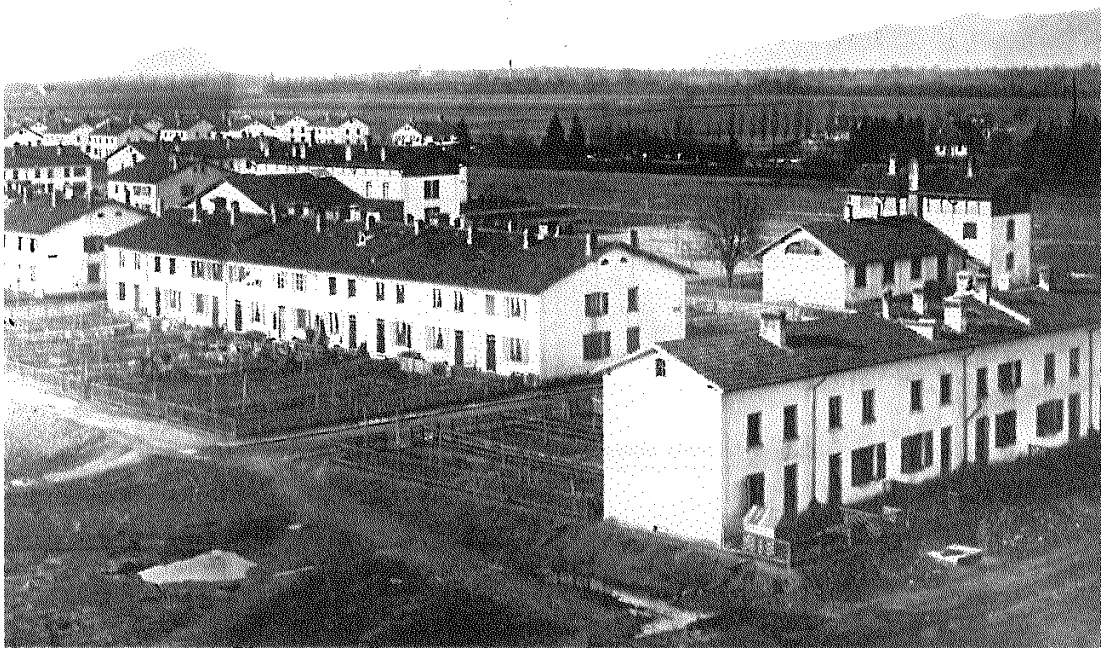

Figure 5. View of the first development phase of Cité Ouvrière in Mulhouse, ca. 1857. Source: Jonas (2003, p. 136).

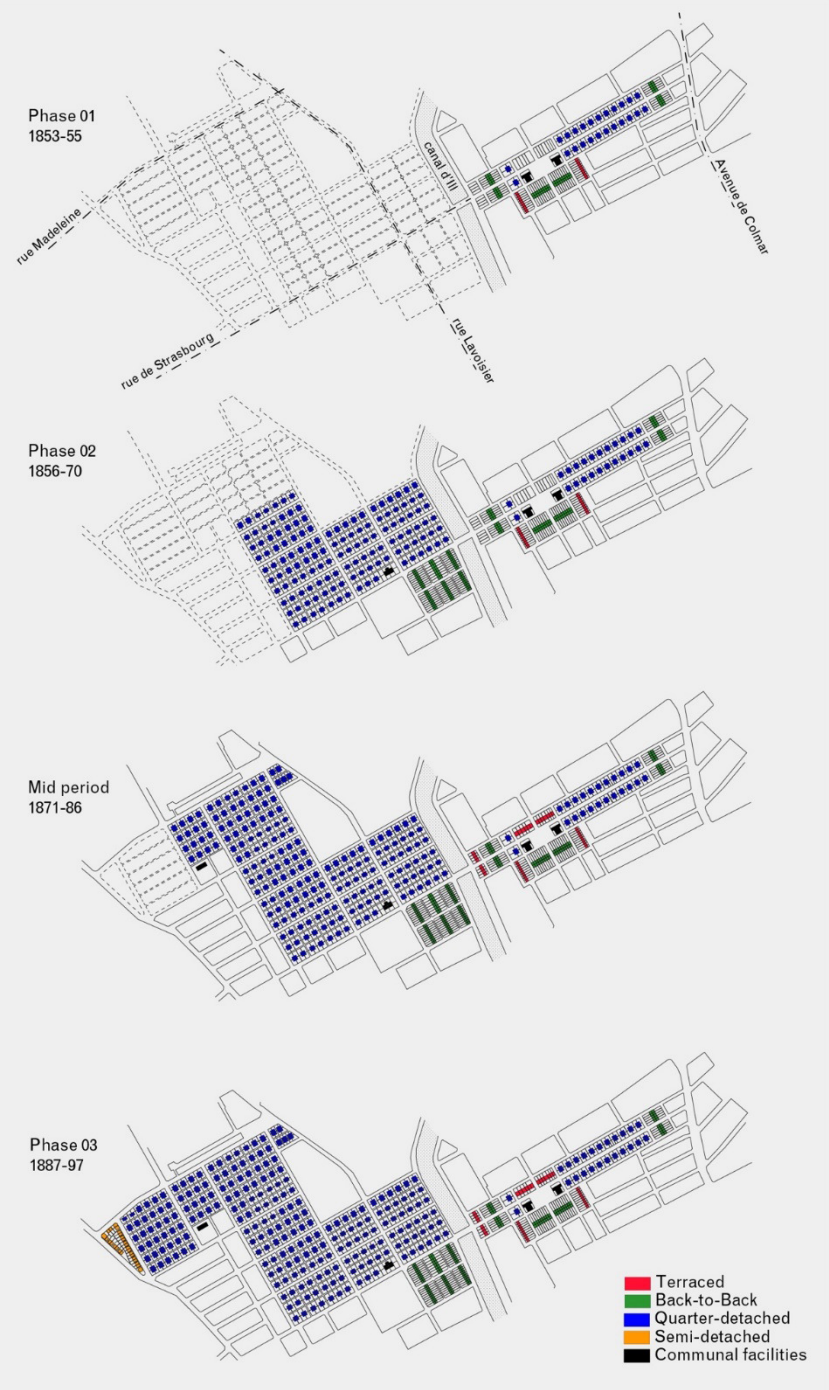

Figure 6. Construction phases of Cité Ouvrière and standardisation of housing typologies. Source: Kostourou (2020, p. 107).

because the industrialists considered such changes an "aesthetic of the poor" and "disgraceful" (de Lacroix, 1901, p. 447), for it ruptured the uniformity of the Cité and spoiled the homogeneous image that a mass low-cost housing scheme should have had at the time.

Even during the 44 years it took to complete Cité Ouvrière, both its form and infrastructure, as well as the social model and economic policy it provided, were constantly revised and adjusted by SOMCO and the architect based on the experience and evidence they were gathering from the previous phases.

3.2.2. A Cité Par Excellence

Besides the unique Mulhousian model that made such an endeavour possible, the Cité Ouvrière was influenced by previous developments in London, Brussels, and Paris. The first city offered inspiration on the formation of housing associations, architectural typologies, especially those published by the British architect Henry Roberts in 1850, and planning laws. Brussels showed the importance of hygiene reports and of municipal participation on residential projects, such as the *Cité* de

Grand-Hornu in Boussu (1810–1830) and the *Cité* of Grandes Rames in Verviers (1808–1810), known thanks to Edouard Ducpétiaux (1846). Paris showed the influence of Social Catholicism and the governmental policies on housing that had already started with the establishment of the first Société des Cités Ouvrières de Paris and the erection of the first working-class scheme in the country, the Cité Napoléon (1849–1851; Jonas, 2003).

Nonetheless, the Mulhousian Cité became internationally renowned as the largest and most successful realised example of employer-constructed housing in Europe for the years 1850–1870 (Jonas, 2003). At the 1856 Exposition d'Économie Domestique in Brussels, the scheme was seen as the epitome of working-class housing, while in the 1867 Exposition Universelle (d'Art et d'Industrie) in Paris (Figure 7) it won the golden medal for presenting a full-scale model of a cluster of four quadruplex houses, a typology known in French as the *carré mulhousien* (Clement, 2018; Jonas, 2003).

The project became known in Britain through the architect Henry Roberts. Both Müller and Dollfus shared the scheme's details with Roberts at the Congrès International de Bienfaisance in Brussels, in 1856, and in London, in 1862. This was enough to convince Roberts of its innovative nature in terms of social and financial organisation. Roberts (1867, p. 57) notes that the Mulhousian Cité was done "on a scale more extensive and complete than that of any similar establishment in France." The British *Daily News* of 1866 also recognised it as equivalent to the UK textile workers' town of Saltaire, near Bradford (Clement, 2018), while a year later the British magazine *Engineering* praised its effectiveness in "decreasing labour disputes and increasing industrial productivity" (Ermenc, 1957, p. 130), referring to the friendly relationships between the employers and the employees.

Inevitably, there were many attempts to copy the example in other French cities, though, as Clement (2018,

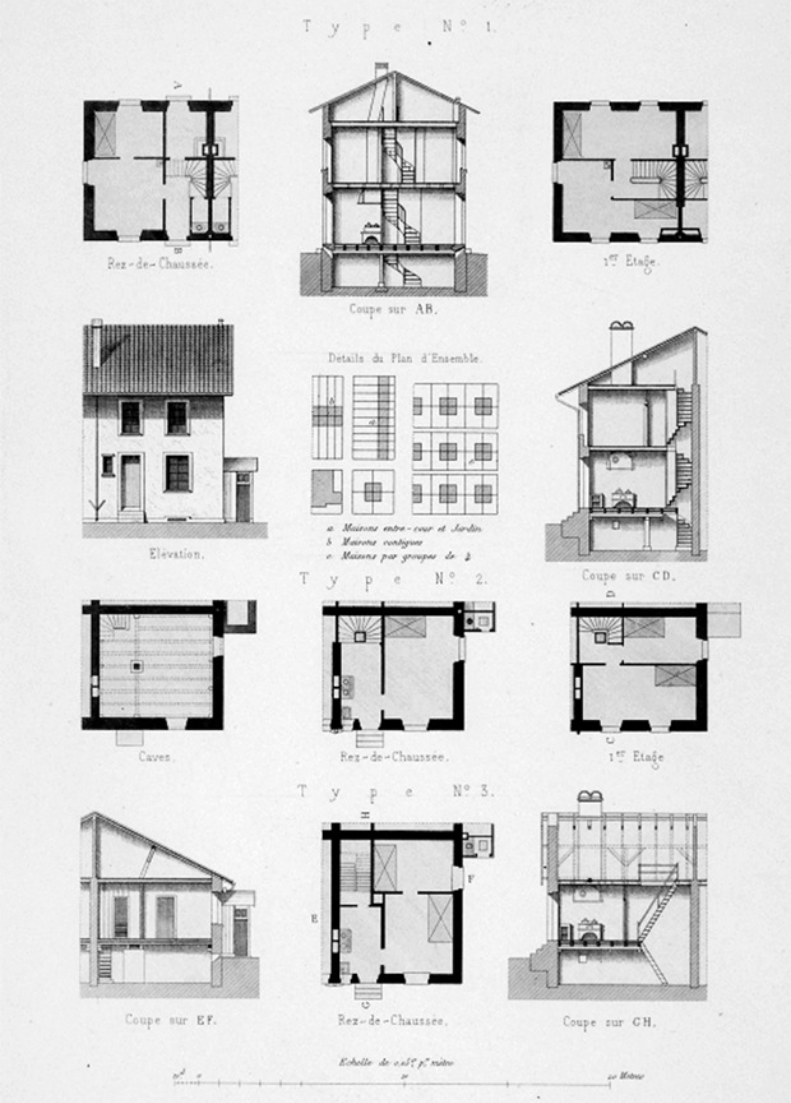

Figure 7. Housing typologies presented to the visitors of the Exposition Universelle in Paris, 1867, and published in *Revue générale de l'architecture et des travaux publics*. Source: Canopé Académie de Strasbourg (n.d.).

p. 18) argues, these efforts had limited success without the "shared desire of the overlapping municipal and industrial elites to improve housing" and the favourable conditions of the Mulhousian model. In France, cities like Lille, Roubaix, Bordeaux, and Nancy contacted the local authorities for plans; however, either the projects were small-scale, or the social policies were rather paternalistic. For example, architectural historian John S. Garner (1992) notices that while the Cité Scrive de Marcq-en-Baroeul in Lille (1854) was meant to replicate the Cité Ouvrière model, the society was more closed and subordinate to the company than in Mulhouse, and, instead, mechanical discipline and social order were imposed. Within the Alsatian region, the attempts proved to be more successful because there were similar political and religious conditions as well as ties to Mulhousian associations. Realised examples include Herzog in Colmar (1866), the Cité Bourcart in Guebwiller (1856), and the Japy's Village at Beaucourt (1864; see Boissière, 1876; Guerrand, 1967).

The Cité Ouvrière also influenced developments outside France, such as the settlements built by BASF, Farbwerke Höchst, the Bochumer Verein, and other Ruhr mining and chemical companies in Germany (Honhart, 1990). It also inspired entire neighbourhoods like the Cité de Linthout in Schaerbeek, Brussels (Smets, 1977; Viaene, 1994). Furthermore, the typology of quarter-detached houses was copied in workers' settlements in Küchen (Belgium), in Krähnholm (Russia), and in Bubna, Buda, and Pest (Austro-Hungarian Empire), while the idea of providing gardens for cultivation by the household inspired the hotel Louise (1872) in Micheroux, Belgium (Müller & Cacheux, 1889a).

4. Agents of Change

Both during the development of the settlement but also right after its completion, individual houses and plots began receiving a large number of small-scale extensions and modifications that emerged gradually from the bottom-up, i.e., as a result of many individual human actions (Figure 8). The inhabitants and owners incrementally expanded their houses, altered the roofs and facades, added sheds, garages, shops, and workshops, or rented out parts of their holdings for income (for more on physical changes and housing growth see Kostourou, 2021). In that sense, the delivery of the project ushered in a new "development" period of major extensions and modifications that was not planned by SOMCO or the municipality.

In the chronicle of this project's conception, phasal development, and post-occupational growth, a combination of different kinds of agents using different means to instigate changes at different scales is identified: At city level, the principal agents are public, namely the local authorities and the state; at the level of the neighbourhood, agents are both public and private, ranging from the state, the municipality, SOMCO, especially Jean Dollfus, and the architect Emile Müller, as well as the workers–inhabitants; and at the level of buildings and plots, the main agents are the inhabitants, the architect, and the local authorities. The agency of these actors has been primarily effected through their visions, decisions, and actions and spatially expressed in changes in the built environment. Table 1 summarises all these observations.

4.1. The State

The state represented by its emperor Napoleon III in the mid-19th century supported a programme of public housing in France. With sociologist and economist Frederic Le Play as counsellor of state, housing initiatives were directed towards the reformist agenda informed by Le Play's study on the socio-economic condition of the European working classes. This culminated in subsidising private enterprises. Cité Ouvrière was the first scheme outside Paris financially supported by the government. Following the French housing act of 1852, the government contributed ₣150,000—equivalent to approximately €460,000 today (Monange, 2001)—and the municipality added another ₣150,000 to cover the public infrastructure of the first *cité* (Jonas, 2003). Furthermore, the entire model was based on the "philanthropy of 4%"—instead of five, which was the case in Britain (Tarn, 1973)—meaning that SOMCO collected only 4% return on its original investment (Jonas, 2003). Meanwhile, the land on which Cité Ouvrière was built was cheap, 1 ₣/m^2—in comparison to 75 ₣/m^2 for the Cité Napoleon in Paris (Bullock & Read, 1985)—because the land was originally owned by Jean Dollfus who granted it to SOMCO at a low price. This helped to keep the average cost of houses low, ranging between ₣1,850 and ₣3,500, depending on the building type (Müller & Cacheux, 1889b). Although eventually state funding was delayed, the promised amount (₣300,000) was not deposited in full and it did not continue in the subsequent development phases, this marked an important political decision that established a welfare approach to working-class housing. The involvement of the state here is one of the earliest examples of public-private partnerships (PPP) in housing and urban development, arriving more than a century before PPP became popular in project finance. Unfortunately, in the subsequent development phases the socio-economic model started to become brittle, revealing the limitations of liberal philanthropy.

4.2. The Municipality and the Housing Association

The municipality in collaboration with SOMCO were instrumental in the development and subsequent evolution of the scheme by supporting the industrial production, undertaking charity work for the poor and disadvantaged employees, setting up welfare and public facilities, and offering the workers salutary and affordable housing with the possibility to access homeownership.

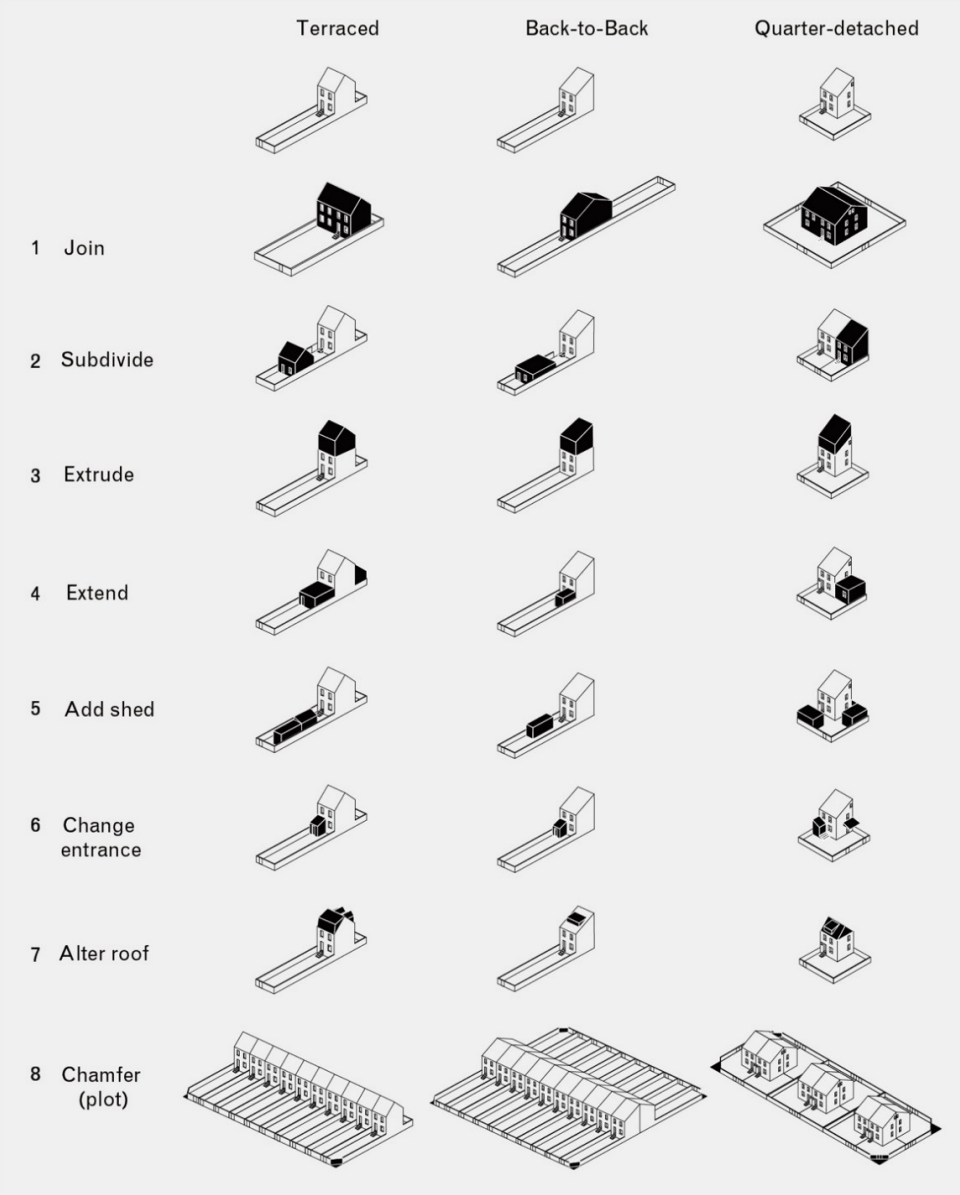

Figure 8. Types of exterior physical transformations found in the three main housing typologies of Cité Ouvrière in Mulhouse. Source: Kostourou (2020, p. 260).

Although the initial goal of the industrialists was to reform the social and moral state of the working-class through housing and ownership, it was their pioneering visions and actions that led them to co-fund the scheme, secure land, provide public infrastructure, introduce an innovative financial model, and initiate the new quarter-detached typology of *carré mulhousien*. With time, the socially enlightened capitalist approach gave way to a more liberal economic model, where design decisions were driven more by speculation than utility. This transition became evident both socially and spatially, particularly with the abandonment of communal facilities and the standardisation and shrinkage of houses. Regardless, both SOMCO and the municipality have been closely involved since the beginning in shaping the architectural and urban design of the scheme as well as its social and economic operation always in response to wider socio-economic and political events.

Specifically, once the scheme was completed, the municipality—represented by the mayor, the delegated assistants, and the planning service—sought to regulate the establishment of non-domestic uses in the area, the conservation of the architectural patrimony, and the mitigation of the effect of physical growth to prevent the total degradation of the built environment. With the approval or rejection of building permit applications and the implementation of infrastructural works, they controlled whether changes would take place, how many and what kind were possible, and when, where, and how these would materialise, affecting the overall degree of physical transformation and by extension the architectural image of the entire neighbourhood. To illustrate

this, the majority of physical changes occurred during the 1920s–1930s and 1950s–1960s, after the introduction of sewer pipelines and cars, which led to the construction of entrance porches and the chamfering of plot corners respectively.

However, regulations have not always preceded the construction and application processes. Although SOMCO, SIM, and Müller had predicted that adaptations would take place, especially after the residents became owners, still, they could never anticipate that rapid rate of change. This is why in the archival documents there sometimes were building rules ensuring the preservation of the original character of the scheme and the reformist aspirations of the industrialists and, other times, laws were only formally enacted after the inhabitants filed requests or unauthorised constructions were reported. The research showed that from the 259 unsuccessful building applications in 520 examined properties, 126 complied with the negative decision and 133 went on to realise the development without approval, from which only 44 were legalised afterwards by paying fines. In most cases, completed constructions were never legalised.

Therefore, it seems that there was—and there still is—some "flexibility" and considerable room for interpretation of the legal framework by the executive authorities. Indeed, regulations have been customised or revised on a case-by-case basis. For example, in one case, the municipality agreed on the extension and changes of facade, roof, and entrance by amending one of the articles of the Plan d'Occupation des Sols (Land-Use/Zoning Plan [POS]) of 1986 after evaluating the existing conditions, the nature of the project, and the improvement this would bring in terms of visual cohesion in the area. On a different occasion, the authorities showed willingness to disregard the violation of the minimum permitted distance (3 m as indicated by the POS of 1977) of a prefabricated garage from the property limit as long as the neighbours would give their consent. More recently, in 2000, the municipality allowed the height of a back-to-back house to be extended beyond the authorised maximum to better match its adjacent, already extruded buildings, and a year before they allowed the construction of a roof terrace because the neighbour had one too, despite terraces being prohibited by the POS of 1995.

Essentially, the spatial agency of the municipality has been effected locally through the enactment of building and zoning regulations and their adaptation on an if-and-when-needed basis to respond to the changing demands of the residents, the local cultural habits and styles, and the architectural image of the Cité. However, at the neighbourhood level, their agency has been effected through the way the Cité had been initially planned and the way subsequent expansions of the wider city network ended up encircling the area, making it centrally located within the city—close to the city centre and adjacent to well-served quarters (Kostourou & Karimi, 2017). It was a combination of planning decisions, visions, and actions that gradually transformed a suburban and uniform settlement into a denser and morphologically more diverse city quarter.

4.3. The Architect

The third agent of change is the architect Emile Müller, whose design decisions had a major influence on the potential of houses to grow and change. By deciding on specific building types and plots, their sizes and shapes, and their configuration in relation to each other and the street, he imposed geometrical and formal constraints that allowed certain possibilities to occur while inhibiting others (Kostourou, 2021). For example, the narrow and deep plots of row houses encouraged frontal extensions and the squared plots of quarter-detached houses allowed for double adjacency, prioritising beside extensions, and enabled plot and house accessibility from multiple points (Figure 8).

Notably, the original small houses offered residents the possibility to extend them both vertically and horizontally. The front gardens initially allowed for the cultivation of vegetables and the generation of income for the household, but they also left considerable open space on the ground floor for annexes, workshops, and garages to emerge. In fact, the surplus open space embedded in the original design has been found to be a key enabler for physical change and growth and a precondition for a "slow and contained densification process" like the one that followed (Kostourou, 2021). Furthermore, the planned narrow passages—tertiary streets only 2,5 m wide particularly present in the second and third development phases—were another conscious urban decision to accommodate water pumps in case of repair, to uphold the hygienic principles of the scheme, and to provide lateral connections within the neighbourhood, while offering intimate spaces for the daily interaction of the inhabitants. Müller himself had noticed after the first *cité* how well frequented these passages were, so he increased their number in the subsequent phases (Jonas, 2003).

In short, both the conceived and the actual design of buildings and plots facilitated, and to a certain extent even encouraged, subsequent alterations and additions in the built form. Although Müller's agency was effected more than 120 years ago, its impact on building and urban change has been catalytic till the present day.

4.4. The Inhabitants

The last—and admittedly the hardest to predict—agent of change is the workers and, more generally, the inhabitants residing in the housing scheme from the beginning. The first residents who accessed ownership, but also all the owners and tenants who have succeeded them since then, have taken an interest in investing both material and immaterial resources in the area. Not only have they spent energy, time, and money on maintaining

and adapting their houses, ensuring they remain relevant and viable for more than 160 years, but they have also participated in communal activities, organised community groups, and developed social networks for different ethnic minorities, boosting feelings of belonging and identity (Kostourou, 2019).

Specifically, the local economic activities have invited more socio-economic groups into the area, building relationships among existing residents and newcomers and empowering the community. Especially after SOMCO declined the co-management of the cooperative Société de Consommation des Cités Ouvrières by the workers-members (Grad, 1879), workers, together with traders and artisans, set up their own independent businesses and, in less than 20 years, the neighbourhood already counted 58 shops and workshops—one per 113 residents (Jonas, 2003). Meanwhile, the central location of the neighbourhood and the wider development of the city gradually made Cité Ouvrière a major residential draw for immigrants who sought to settle down in the city. Since the beginning of the 20th century, foreign workers from Germany, Switzerland, Italy, Poland, Northwest Africa, Turkey, and Portugal have moved into the area to work in public construction sites, potash mines, and automobile factories (Jonas, 2003; Stoerkel & Vitoux, 2018). Even today there are more than 140 nationalities living in Mulhouse and Cité Ouvrière is among the most ethnically diverse parts of it (Meichler et al., 1998). Thus, by acting as "a reference arrival point and arena for intercultural encounters, contacts, and associations" (Kostourou, 2019, p. 87), the neighbourhood has managed to diversify itself ethnically, socially, and culturally, which has unquestionably diversified the motivations and actions of individuals who operate at its most intimate scale.

So far, the agency of the inhabitants has mainly been affected by the socio-economic logic of their households including issues of kinship, widowhood, inheritance, family growth or shrinkage, migration, etc.; the integration of micro-businesses in the same premises; and the frequent changes in the land ownership, which, as previous studies have shown (Boudon, 1972; Whitehand & Carr, 2001), exerts an instrumental influence on the change of urban form. Specifically, there is a handful of cases where residents bought two or more adjacent properties which they either combined to increase the surface area of their house or turned into a multi-apartment building to generate income. Sometimes the owners did not live in the house but had themselves moved to one of the nearby suburbs and rented out the house to tenants. Sometimes, the inhabitants operated as developers, by buying multiple properties, investing in construction and repair work, and then selling or renting parts of them for profit. I also observed that residents living in nearby houses were often relatives or friends.

Growing houses, like those in the Cité, are ideal for multigenerational households or extended families, and for the operation of microbusinesses. As mentioned above, throughout the years, residents have repeatedly accommodated non-residential uses in their houses, like workshops, bars, shops, and market gardens, or converted entire buildings into hostels and restaurants. The combination of living-working has demanded adaptations in the buildings and plots to provide the spatial and infrastructural conditions needed for the operation of the businesses. A few examples include the installation of special machinery in the interior, like meat processing devices and refrigerators; the erection of garages, sheds, or storages in the garden for drivers, bakers, locksmiths, and repairmen; the expansion of kitchen and washrooms for restaurants; and the modification of facades with glass openings, often accompanied by advertisement signs. Growing families have also demanded the expansion of space. For instance, one of the Portuguese families who bought a quarter-detached house in 1982 has already made significant extensions to accommodate their adult children and grandchildren under the same roof.

Finally, frequent ownership changes of houses have also contributed to the high number of physical changes observed in the area as a result of individual lifestyles, whereas the close proximity of houses has helped the diffusion and perpetuation of similar kinds of changes through time. This has been partly because building practices and knowledge about how to adapt and grow the same houses have been disseminated between neighbours or passed on from one generation to another, and because the knowledge of what is feasible or possible to change has been acquired through trial and error, and some well-tested and highly visible solutions have been replicated by those living nearby—the so-called "neighbour effect" (Whitehand & Carr, 2001, p. 167).

Ultimately, the spatial agency of the inhabitants has largely determined the survival of Cité Ouvrière over time, ensuring buildings remain fit for their purpose and maintain their lifetime value, while people sustain their social networks and economic activities. Historically, the individuals and the community have contributed to the making of a "do-it-yourself" spatial culture, which, as Jonas (2003) observes, is a common practice among low-income and disadvantaged populations with scarce resources. Yet, it is exactly this spatial culture that adds to the distinctive industrial character and cultural heritage of the neighbourhood.

Part of this emergent spatial culture has been manifested in the way the inhabitants have managed throughout the years to grow into "active agents of change," getting involved in the present and future of their neighbourhood, despite being excluded from the design and construction of the original settlement. By active spatial agency, I do not mean that people built the extensions and additions themselves—although some did—but rather that the decisions they took in terms of ownership, use, and real-estate development were vital in shaping the urban and built form of the area. In other words:

> The physical changes were essentially social and spatial expressions of active citizenship and design. This enabled inhabitants to shift from being [according to the words of Turner (1979)] passive consumers of housing goods and services to "active participants" in the aging of their homes and neighbourhood. (Kostourou, 2019, p. 92)

5. Conclusions

In this article I have discussed the main spatial agents involved in the formation and transformation of Cité Ouvrière in Mulhouse from 1853 to the present. I can group them into three sectors and summarise their motivations as follows: (1) the public sector, including the national government or the local municipality; (2) the private sector consisting of the industrialists and the housing association of SOMCO; and (3) the citizen sector, including all the workers and residents who have lived in the settlement since the end of 19th century. Within the limited geography of the case study and the particular period of study, the public sector was shown to be mainly driven by social—at times financial—aspirations; the private sector seemingly performed a public service, yet it was motivated by personal profit; and the inhabitants kept mostly acting out of personal interest in the proliferation of both their physical and human capital.

My second observation refers to constraints impacting their ability to implement changes. In summary, agents were constrained: (1) socio-economically, by international events (economic recessions, world wars, the decline of textile industry), political agendas (social reform, immigration), and micro-finances (internal logic of households); (2) spatially, by the topography of the land, the natural or infrastructural boundaries, the geometry of the streets, the dimensions and shape of plots and buildings, and the configuration of buildings within plots; and (3) legally, due to building regulations and planning documents, such as zoning plans, acts, ordinances, and decrees that specified minimum and maximum standards for any construction or alteration of buildings and plots. The question then is: How can built environment professionals plan for these constraints as tools for urban changeability? While the implications of certain decisions—for example, on city development, regulations, non-domestic functions, building size, open spaces, and street layout—can be more easily foreseeable, others that depend on national, even international, socio-economic and political changes and technological advancements and affect, for instance, housing supply and demand, available funds, immigration, or building changes can be harder to factor into the process.

One of the lessons learned from the example of the Mulhousian Cité is that collaboration between spatial agents at different levels may help overcome certain constraints and allow for change to occur in the future. One example is the PPP, which is, nowadays, a common neoliberal model to develop public projects financed by private capital. The model is highly controversial because, whilst PPP covers costs where the state is unable to provide funds and secures returns on investment by the private funder, it removes the accountability of the welfare state to provide social services and projects, not to mention the increasing privatisation of public assets. However, what differed in Mulhouse were the social aspirations driving the financial involvement of parties, which nonetheless remained unchanged despite the partial realisation of *projet idéal* and the gradual shift to a more speculative approach to housing supply. At the same time, decision makers were part of, and therefore advocates for both the private and the public sector (industrialists dominating the municipal cabinet), which implies there was a monitored effort to defend the interests of both parties involved.

Another case of mutual monitoring and collaboration occurred between the private housing association of SOMCO, which dominated the conception and making of the scheme, and the inhabitants, who drove its transformation over time. This rotation of spatial agency allowed for the complete transformation of a low-rise uniform suburban settlement into a dense, socially diverse, and formally heterogeneous city quarter. The piecemeal process of individuation that followed the delivery of the project provides another empirical lesson on certain questions that arise in the design process such as top-down versus bottom-up planning and liberty or constraint in the occupants' spatial agency. In the case of Cité Ouvrière, physical changes achieved a synthesis of uniformity and individuality in the design given a plain, regular, and functional layout. Once the basic infrastructure was provided, people could easily appropriate and build on it. Housing growth and change affected the architecture of individual buildings and the urban image of the whole settlement, without ever degrading them. Thanks to the original design as well as a common, yet limited, set of rules, types of physical transformations and shared reasons for change, formal unity, and plurality—rather than uniformity—were attained, thus ensuring a degree of consistency behind the ostensibly morphological heterogeneity, which better reflects the social diversity in the area.

Finally, Table 1 summarises the means instrumentalised by the various actors involved in the process, calling for a reflection on the changing nature of the built environment as a result of the changing and dynamic spatial agency of those actors at different spatial scales. In general, it can be concluded that the public sector can exert more power at the level of the city and the neighbourhood by dealing with the financial and infrastructural aspects of the project as well as the strategic planning within and outside the borders of an urban housing scheme. The private and citizen sector on the other hand, who may act both formally and informally and range from housing associations to architects, planners, and the local community, can play different roles at the level of the neighbourhood, individual buildings,

Table 1. Summary of means of change employed by different agents at different scales.

	City	Neighbourhood	Buildings and Plots
State	Adopt welfare approach to working-class housing; Promote reformist agenda.	Get involved in PPP subsidising private initiative for low-cost housing.	—
Municipality	Plan, expand, and maintain the street network; Enact urban and land policies; Set out strategic priorities for development within different quarters.	Get involved in PPP subsidising private initiative for low-cost housing; Secure land for housing schemes; Provide public infrastructure to housing schemes; Support private initiatives and their socio-economic models; Set up legal framework to control future urban changes.	Establish and implement building regulations; Revise these regulations over time in response to contemporary needs and living habits of the local community.
Private Housing Association	Promote an innovative social model and welfare work policy; Offer workers access to low-cost housing and employment; Promote social reform ideals through housing; Set up welfare childcare, financial and educational facilities.	Provide welfare and public amenities in low-cost housing; Provide new model for ownership with favourable terms for workers; Dispose of privately owned land for low-cost housing project; Standardise design for uniformity and mass production; Encourage small independent businesses; Revise and adjust the social and operational model and economic policy; Tolerate physical changes instigated by residents.	Shape built form based on financial profit and social reform values; Evaluate results from different stages of development and adjust policies; Run post-occupational surveys for inhabitants and the built environment.
Architect	Integrate generous spatial qualities and advanced hygienic measures into urban planning; Propose new model for living.	Determine urban form; Integrate new types of public and private open spaces into the design; Adjust design during the construction to economic policies not entirely to the detriment of social ideals.	Determine building and plot typologies; Provide surplus of open space for future growth or generation of income.
Inhabitants	—	Engage in common activities and organise community groups; Develop and sustain social networks and economic activities; Instigate individual physical changes with larger aggregate effect; Push for changes in the legal framework enacted by municipality.	Set up businesses in their properties; Instigate physical changes, invest in the amelioration of built environment to remain fit for its purpose, and maintain its lifetime value.

and plots, instigating smaller- or larger-scale changes in the built environment as a result of deliberate collaborations, contestations, and negotiations. While architects, public authorities, and private entities may often lead and, thus, influence the conception and development of urban housing projects, the ultimate agents of change are the inhabitants, and as such the ones who should be in a permanent dialogue with the former. The changes arising from the latter are smaller, more individual, localised, anonymous, asynchronous, self-motivated—at times self-regulated—and piecemeal, and thus perhaps quicker-to-undertake but harder-to-coordinate. Yet it is the aggregate effect that emerges from their incremental actions, irrespective of any central coordination or collective awareness, that drastically contributes to the changing of the wider urban built environment. It is this aggregate effect that architects, planners, and authorities of contemporary cities will need to anticipate and plan for when developing residential and urban areas to ensure they change and age well in time.

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Conflict of Interests

The author declares no conflict of interests.

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Article

How Does Water Behave? Unstable Milieu and Stable *Agencements* in Dakar's Flooded Suburbs

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Abstract
In the suburbs of Dakar, matter as a flux is not a metaphor anymore, but a concrete process of city fluidification, disintegration, or solidification. Indeed, the city has been concerned for more than 30 years by regular floods that were established permanently in some districts. Drawing from an assemblage perspective, this article aims to understand how people deal with untamed waters in flooded neighbourhoods and at the city scale. It also raises questions about how we can capture the processes of production, maintenance, and disintegration of cities by identifying stable forms of assemblages and by comparing them according to the specific action that they support.

Keywords
Accra; agencements; assemblage; Dakar; Djiddah Thiaroye Kao; flooding; untamed waters

Issue
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1. Introduction

In the last 20 years, many researchers have used the notion of "assemblage" to express the fluidity of urban fabric and practices. In a huge body of literature (see, e.g., McFarlane, 2011; McGuirk et al., 2016; Simone, 2010), the notion designates the rhizomatic and fluid nature of the urban, made by heteroclite associations between heterogenic elements and actors, enrolled by different forms of collective actions, and engaging processes of territorialisation and deterritorialisation. Allowing to go beyond the frontier of human and non-human, material and immaterial, and formal and informal to understand how these different elements are actively entangled to "compose" the city, this line of thought has been the target of much criticism for its supposed "naïve objectivism" (Brenner et al., 2011; Scott & Storper, 2015). For the latter, assemblage thinking would not allow differentiating matter is in urban processes. If the reality is fluid, made by precarious arrangements, how do we know the forces that *really* orient these arrangements, global capital, or dynamics of "city land nexus"? The aim of this article is not to add another stone to this ongoing debate. By analysing the case study of the Dakar suburbs in Senegal, affected by permanent floods for over 30 years, I will try to understand the different ways that dwellers, local organisations, and NGOs are crafting specific kinds of assemblages to deal with, contain, or orient untamed waters. Seriously considering the criticism towards assemblage thinking, I will nevertheless emphasise what differentiates these assemblages, to understand what they do, their consequences on the city making, and how they are structured and why. We will see that it requires attention on the human-water association and a theoretical addition to the notion of assemblage.

The understanding of dynamics and agencies of the flux of matters is at the core of recent works attempting to reconstitute how cities are made and unmade (Choplin, 2019, in press; Meulemans, 2020). Especially in the time of the Anthropocene, it has become crucial to understand how city dwellers and city makers are building landscapes, arranging elements and entities like concrete, water, or soils (Tsing et al., 2019), but also

how these elements are transforming urban landscapes. In the Dakar suburbs, my thesis field, this task is crucial since water has already engulfed entire neighbourhoods. Matter as a flux is not a metaphor anymore, but a concrete process of city disappearance, disintegration, or solidification. I will characterise this process by analysing the "behaviours" of water, that is to say, how flooding waters affect neighbourhoods and their inhabitants. We will see that the understanding of how the water behaves within the city and through the lens of affected dwellers and policymakers will allow us to differentiate some circumscribed assemblages of action within the flooded city.

Trying to draw from the sometimes-dizzying thought of Deleuze and Guattari (1975), sociologists recently returned to their original term of "*agencement*" to discriminate different forms of "composite objects" (Dodier & Stavrianakis, 2018). For Callon (2017), the use of *agencement* allows emphasising the active function of assemblages that are no longer resumed to contingent associations of heterogenic elements. To be clear, *agencements* are assemblages that have a goal: They are an association of different actors and elements that achieve a specific action. In this article, we will try to separate different *agencements* that involve flooding waters according to their specific action on the city. In doing so, we will see that these different *agencements* are not equivalents in terms of actors and elements involved, of scales, objectives, and claimed worth (Boltanski & Thévenot, 2006). They draw different forms, more or less stable, which I will try to name in order to differentiate them and thus begin to understand which one "matters'' and how. From now, I will use the term *agencement* to designate a composite "collective action, strategic, structured and oriented toward the solving of a problem" (Callon, 2017, p. 402).

First, I will try to give an overview of different "behaviours" of flooding waters in the Dakar suburbs. Drawing from these behaviours, we will see that they relate to specific *agencements*, supported by affected city dwellers and other actors, to protect themselves against the floods, or to "relieve the community." In so doing, we will start to differentiate two types of flood-related *agencements* in affected neighbourhoods according to their goal, the actors involved, and the type of water behaviours that they address. Then, we will observe how an alliance of local organisations and NGOs tried to address the floods problem at a municipal scale and then of the entire agglomeration, engaging different types of negotiations and arrangements between actors involved. In the conclusion, I will argue for intermediate objects, here flood-related *agencements*, to be replaced in the set of constraints and possibilities that frame actions of city dwellers to understand the constant production and disintegration of urban milieus.

This article is based on a multi-sited ethnography (Marcus, 1995) of the floods in the suburbs of Dakar and Accra, conducted between 2015 and 2019, and alternating observational participation, participant observations, and semi-structured interviews (Cefaï, 2010; Tedlock, 1991). My Dakar enquiry focused on a suburban municipality, Djiddah Thiaroye Kao (DTK), following ramifications that also led me from the city courtyard to World Bank or state agencies offices. This corpus consists of 59 semi-structured interviews, almost all of which were recorded and conducted with the above-mentioned actors, members of NGOs, state agencies or the administration, international institutions, residents' organisations, or the municipality of DTK directly concerned with flood management in the Dakar suburbs. These materials only make sense in light of about 400 pages of observation notes and a large number of documents from the grey literature (project documents, diagnostic documents, and communication documents for the various collective action mechanisms observed). In addition, there are about 600 newspaper articles of varying length (sometimes simple sidebars) concerning flooding, urban planning, and rainfall, over a period ranging from 1987 to 2009. Due to time constraints and difficulties in procuring this last material, I have not continued the research after this last date.

2. Understanding the "Behaviours" of Water

In some neighbourhoods in the suburbs of Dakar, negotiations with water characterise an entirety of "living" practices (Rose, 2012). Inherited from a long history involving the variations of the Sahelian climate, the largely informal expansion of the city throughout the twentieth century, the dynamics of the water tables, and the dunes on which the city was built, flooding has indeed the particularity of having established there (Leclercq, 2020). Figure 1 presents one of the aspects of this phenomenon. Under the effect of the rising water table under the Dakar suburbs area and the resurgence of rainfall in the late 1980s after a long period of drought, some neighbourhoods have been literally engulfed by water (Figures 1 and 2), forcing their inhabitants to abandon them, and leaving room for brackish water, aquatic plants (*typha*), and garbage (O. Cissé, 2019; Thiam, 2011).

However, the abandonment of neighbourhoods is only the most extreme form of how water reshapes the city and the living forms. The topography of the area, made up of largely urbanised dunes, and now inhabited former wetlands (*niayes*), and the gradual and non-homogeneous rise of the water table, under the effect of the return of the rains and the cessation of its pumping by the public authorities at the beginning of the 2000s (Leclercq, 2017), led to a form of "nibbling" of the city by the water. In addition to having settled in certain neighbourhoods, the waters progressed from year to year, engulfing more and more houses until the late 2010s. In this context, preventing the progression of water in the streets or houses is a daily task, at least during the few months of the rainy season. Sitting in front

Figure 1. Abandoned neighbourhood in Medina Gounass. Source: Piriou (2019, p. 16).

of his house in the Leona neighbourhood, Mouhamadou Bathily (40s, unknown occupation, ex-member of local and municipal flood mitigation groups) explains that he has filled in his yard with sand several times and that he has moved the door of his house because of the advancing waters in his neighbourhood. Pointing to electric poles protruding from the aquatic plants (*typhas*) in the abandoned neighbouring district, he describes the progressive advance, year after year, of the waters:

> Romain: And you realised this from the start? That, as time went by, the level of water increased?

Figure 2. Leona (left) and Messere (right) today. Note: Entire sections of the city are now covered by water and *typhas*. Only the abandoned houses and businesses on the edge of the *niaye* (former wetlands) and the electric poles that sometimes emerge from the vegetation allow us to grasp the presence of old neighbourhoods in these areas. Source: Courtesy of Alex Amiguet and Djibril Diallo (pictures taken in 2011).

> Mouhamadou: It was increasing! Yes, it was increasing, at the time it was over there [he shows me a point far away, in the heart of the abandoned neighbourhood], the third pole. That's it. Since '92, at that time the water reached the third pole there.....In 2009, the water was coming up to there, up to the first pole there [he shows me a power pole located right next to his house, and above the level of his yard, where he built his second door].

Then, showing me one of the houses, abandoned and invaded by *typhas*, located on the other side of the street, he explains:

> The people who used to live in that house, now they are gone, but at that time, they were the last ones to stay. When they left, they broke the walls, the rooms that are there (the inhabitants wanted to recover some of the bricks from their house before leaving). So, they wanted to break this wall too [he shows me the outside wall of the house, which separates it from the street], but I was the one who said "no, you can't break that wall, because if you break that wall, the water will flood the street!" Yeah, at the time the street wasn't like that [today the street has been backfilled, clearly separating the abandoned area from the rest of the neighbourhood] but after 2009, those people left. Well after that it became like that. (Excerpt of the interview recorded on 26/08/2016, in the street alongside his house in Leona, DTK)

The case of Mouhamadou is not isolated. In fact, in all areas regularly flooded or totally underwater, residents have been forced to fight against the inexorably advancing water for over two decades. This fight takes several forms, according to different behaviours of water. First, it could be a temporary departure or a collective mobilisation to evacuate the water from the houses and the yards using different containers. In this case, the mobilisation responds to the "intrusion" of the water and aims to deal with its brutal advance. However, as Mouhamadou explains, floods are also a creeping phenomenon of spatial-temporal expansion. As the year-round settlement of the water leads to the permanent abandonment of entire districts, it allows water to progress house by house and threaten more and more neighbourhoods. The fight against water is then carried out through the redirection of water (drainage, pumping) and containment. By preserving the walls of the old, abandoned houses and clearly separating the abandoned neighbourhoods from the others that are only slightly affected, it is a matter of slowing down the progression of the water as much as possible or even containing it within a limited perimeter. For the inhabitants that have abandoned their houses, or live near these areas, the water also acts in a third way: by stagnating. In these situations, the abandoned neighbourhoods are physically transformed and take on negative perceptions, becoming dangerous spaces for children (risk of drowning and diseases) and supposedly home to wild animals and bandits. For neighbours of these spaces or inhabitants of districts that are only temporarily under a regime of stagnant waters, soils are humid and the water is rising by capillary action in the cement walls and through the leaky septic tanks, gradually weakening the foundations and forcing a constant reinforcement work and raising of walls.

Water is acting, therefore, by permanent occupation and disintegration of the built environment. In DTK, the continuous action of waters has transformed the material and social structure of the city since the end of the 1980s, taking different forms, from the intrusion of water to stagnation within districts. These transformations are not, however, a one-way street. Efforts to manage and move water in the suburbs, embodied for example in large drainage infrastructure projects led by the state and the World Bank over the last 10 years, have notably drained certain areas that were previously underwater. These areas can now be repopulated and rebuilt, sometimes by their former owners, sometimes by newcomers. The struggle with water is not disappearing but moving to other places through ongoing negotiations between people and elements affected and affecting the urban environment. The form of this negotiation and the agency attributed to the matter depend on the scale of action, its objective, the actors involved, and the local configuration.

3. Containing or Orienting the Waters? Two Specific *Agencements* at the Neighbourhood Scale

In DTK, the municipality where I led inquiries, there are thus numerous ways to deal with several behaviours of waters in time of permanent floods (O. Cissé & Sèye, 2015). It appears that both "ways to deal with floods" and "waters' behaviours" are not separate from one another but closely related. In DTK, to build walls or backfill houses to contain the progression of water as emphasised above and to drain or pump the water away from a flooded neighbourhood are two sets of activities related to different situations, diagnoses, and behaviours of water.

Backfilling houses or raising walls is relevant for individuals who live on the outskirts of flooded neighbourhoods—expected to be affected if nothing is done—or in temporary flooded neighbourhoods. "Temporary" refers here to an individual projection in the future, an expectation of households realised vis-à-vis the behaviours of waters and the degree of their "spatial-temporal" expansion (Will they extend up to my house? How long will they stay?) and current urban and social situation. DTK is indeed an old settlement of the suburbs of Dakar, considered as largely informal, originally populated with a mix of newcomers from the countryside and displaced people from Dakar during the eviction programs of the 1960s and 1970s (Faye & Thioub, 2003; Vernière, 1977). Today, this municipality is one

of the densest of the whole city, central compared to more recent settlements of the suburbs, and populated by old owners and their sons and daughters who were born in the agglomeration (Duboz et al., 2011), living in large households and with less than 10% of the population declaring a regular wage job (Gulyani et al., 2014). Combined with the land price explosion that occurred at the beginning of the 2000s (List, 2017), it becomes very difficult for people affected or expecting to be affected by floods to envisage leaving their house. Indeed, it would mean abandoning a property for a rented house, which is difficult to foresee with irregular wages, or for a new one located far from the city centre and from the social ties that allow entire families to face the multiple uncertainties that constitute everyday life. In this context, to abandon a house is a last resort, considered only when neighbours have gone, and the money has been spent on multiple house refurbishments and temporary solutions to protect oneself from the floods. Backfill and elevation of walls are part of these kinds of refurbishments. It requires a considerable amount of materials—sand for the most part, sometimes dishes for the poorest—to elevate parts or the totality of the house. This manner of dealing with the expansion of water does not consist in moving water, but other materials from different places to the backfill site, sometimes from a beach, far from DTK, sometimes from a close construction site, and sometimes from a more or less abandoned neighbouring area. It also requires the house owner to mobilise many people, diggers, sellers, transporters, and masons, depending on how wealthy they are, their degree of competencies, and the equipment necessary to carry out the different implied operations. This mobilisation of heterogeneous elements, of different anticipations of the situation, and of the behaviours of these elements, oriented toward a strategic goal that could be summarised in scientific words like "staying in this house despite the spatial-temporal expansion of waters and given the current urban and housing situation," could be considered as an *agencement*, corresponding to this specific situation.

The pumping of water or digging of drainage channels correspond to another *agencement*, more related to collective spaces and the stagnation of water. When districts, streets, or street corners are permanently underwater during a long period but still not totally abandoned by people, or highly important for urban and social functions like a main road or a mosque corner, it could lead to the formation of a collective organised around the pumping of one or more of those sites. Schaer and Hanonou (2017) described this kind of situation in Guinaw Rail, another municipality of the Dakar suburbs, where residents, local organisations, firemen, public authorities, brokers, and sectorial services are gathered to "co-produce flood response services." I also showed in a previous article (Leclercq, 2019) how this kind of collective needs to defend and justify a "common worth," adapted to a "correct" diagnosis of the situation and thus to a "correct" objective, to legitimate its intervention. Here, what is interesting is that these objectives and diagnoses depend on each other and the behaviour of waters. Like a member of a local organisation said, these collective actions are not legitimate because they are effective, but because they are considered by the affected people, the firemen, and the local organisations as an adapted solution, at least a possible one, considering the stagnation of water:

> Pape Gueye: There was also a captain of the fire brigade who lives here, his name was Abdoulaye Ndiaye. He was the commander of the fire brigade which is here. Once they gave us 17 tankers.
>
> Romain: To pump water?
>
> Pape Gueye: To pump water. But it was reluctantly. They pumped for maybe 10 days. But on the 10th day, we found that not a single litre of water was gone.
>
> Romain: It didn't change anything?
>
> Pape Gueye: It changed nothing, nothing. It was at Daroulaye [name of a district], you know, it's always flooded there….Even him [the captain of the fire brigade], two years after that, he told me that he knew that it was not going to do anything, but he had to do something to reassure people….Even we [his local organisation] sometimes had strategies. Sometimes, people were exhausted by the water, when we arrived with a motor-pump they were… they could even sleep in the water. Because they will see, they will know that "this water will go because there's the machine." Sometimes, we didn't even pump, but we put it in. (Excerpt of the interview with Pape Gueye, 40s, mechanic, member of a municipal flood mitigation group. Interview recorded on 16/08/2016 in an office of the DTK town hall)

The stagnation of water, here characterised by the "always flooded district" situation, makes the pumping ineffective in certain cases. In many more or less permanently flooded areas, it is the high level of the groundwater table that causes the water to stagnate, but, because individual backfilling would be impossible in time and space of stagnation, pumping appears as the most adapted solution considering the means of people and their understanding of the situation. If the water has established here, it is better to "make the water go," organising its circulation through pumps and rubber pipes from the flooded zone to tankers, or, more commonly, to another flooded zone. Working at the very core of waters as well as in close contact with affected people, actors like Pape Gueye are trying to "reassure people" in absence of a good solution to address the stagnation of water, creating and maintaining with other actors like firemen a "co-produced flood response service''

agencement. The general objective targeted by those actors, in an attempt to maintain both the networks that allow water to circulate (pumps, tankers, rubber pipes and those who care) and people to be reassured through ongoing negotiations, is the "relief of the community" (Leclercq, 2019) and not the protection of one house or another. In doing so, they are participating in an intricate process of social and physical change of the city itself.

Indeed, these two different *agencement*s are participating in the dynamic of transformation of the city through the floods. Considering the first, consisting of backfilling houses and raising walls, it could be very detrimental for the neighbours that one household alone starts to move sand from elsewhere to their home to keep water out. Indeed, these operations guide the circulation of water in neighbourhoods, possibly toward someone else's house, thus creating what actors called a "low point" ("*point bas*" in French), an area that collects water from the neighbourhood because of its topography. This process could be amplified if the "back filler" collects sand directly from the road of another neighbourhood. These areas usually become stagnation areas for water, leaving no other solution for people living there but to pump if they can gather enough actors, resources, and materials. If they cannot, they would have to leave the house temporarily, hoping that the water will be gone one day, allowing, in turn, to backfill the house or to leave it permanently if the problem persists. Pumping raises the same kind of problem. When you start to pump somewhere, you have to bring the water elsewhere. But, in the crowded districts of DTK and due to the absence of tankers, it usually means that you will bring it to other neighbourhoods, partially or totally flooded, creating conflicts with people living on the outskirts, as well as on the layout of the pipes.

The scale, status, and expected behaviours of the elements and people involved in these *agencement*s, as well as the targeted goals or common worth, become here the very question of understanding what differentiates these two kinds of *agencement*. If the urban consequences and the general process of negotiation between people and water could be the same in both cases, i.e., trying to assess the behaviours of the latter to adopt a solution that is as adapted as possible in a specific urban and social context, the common worth, the objectives, and the actors involved are not. In a backfilling *agencement*, the worth is clearly related to self-protection, targeted individual households against a problem that is perceived to be manageable at the house scale. In a co-produced flood response service *agencement*, the worth is collective, targeting a community problem, and involving representative actors or actors that are legitimately doing something *for* the community. Still, degrees and diversity exist in these different *agencement*s, but their forms appear to be relatively stable at this scale, considering that we can recognise both approaches to dealing with water in different municipalities of the Dakar suburbs (O. Cissé & Sèye, 2015; Schaer & Hanonou, 2017).

4. From One *Agencement* to Another: How to Reach the Right Scale and Stay There

As many authors have shown, the scale of an *agencement* depends on the tools and actors implied, their networks, the arenas that they reach, and the common worth that they claim (Boltanski & Thévenot, 2006; Latour, 2005; Müller & Schurr, 2016). To understand how the behaviours of waters could be enrolled in an *agencement* at the city scale, but also how it can be relegated to a secondary question through the shift of one *agencement* to another, allowed for the observation of the trajectory of one DTK organisation and a Swiss NGO that had an important impact on the flood treatment in Dakar.

4.1. Debating Causes and Consequences of Floods at the City Scale: The Emergence of an Urban Forum

From 2005 onwards, the year of a major flooding episode, demonstrations and marches questioning local authorities in the Dakar suburbs increased. These demonstrations had two major demands. The first was an appeal to the state to provide "permanent" solutions to a problem that had already lasted for more than 15 years at the time of the events, without any large-scale solutions (B. Cissé et al., 2018; Leclercq, 2020). The second is the proclaimed right to inhabit for so-called "informal dwellers," threatened by both water and urban policies to "clear" informal settlements. Indeed, as 30% of the Dakar suburbs, most of the DTK municipality is inhabited by owners without formal property rights, allowing the state to easily displace them and take their land in case of permanent flooding for instance (Leclercq, 2017; List, 2017). In this context, a group of local organisations of DTK started to explore the floods problem with a Swiss NGO in 2007, diagnosing it and searching for structural solutions. This resulted in a development project, conducted between 2010 and 2013 and financed by Swiss donors, building a participatory urban plan for the slum upgrading of the municipality of DTK.

By modelling the dynamics of the water table under DTK and by comparing these models to the rainfall records of the region and World Bank documents on water management in the capital, they realised that the forms of stagnation and progression of water were mainly the result of the gradual rise of the water table located under the suburbs. The latter, fed by both rainwater and wastewater from the populations settling in the urban peripheries of the Senegalese capital throughout the 20th century, has indeed experienced a considerable net inflow of water from the 1990s, combined with the cessation of its use to supply Dakar with drinking water in the early 2000s (B. Cissé et al., 2018; Leclercq, 2017). As a result, the group of organisations and the NGO proposed to resume pumping the water table to lower its level, redirecting the collected water to farmers on the outskirts of the agglomeration, and to take advantage of the spaces thus regained from the water to install sanitation

and drainage infrastructure, and to relocate the populations affected by the floods. This program was carried out first on the scale of the water table, then on the scale of the municipality in an attempt to integrate hydrogeological entities (the water table) and the dwellers' claims (to remain living in their neighbourhoods). To do so, they organised survey and urban planning groups in the whole city, divided into three zones, and they used specific tools, maps, surveys (Figure 3), and World Bank reports to target specific actors and spaces, not only those affected by floods, but mainly decision-makers at the city and national level. They claimed for a kind of urban development, the slum upgrading, widely valued by international institutions since the 1980s (Deboulet, 2016; Huchzermeyer, 2014) and presented since the late 1990s by Senegalese newspapers as a possible solution to informal urbanisation (Leclercq, 2020). Enrolling local organisations, the municipality of DTK, and the regional council, producing debates about causes and consequences of floods (Thoenig, 1998), and finally reaching state agencies, ministries, and even the president of the republic a few months before elections, they called for "commensurate" flood responses (Boltanski & Thévenot, 2006; Khan, 2019). The form of this emerging *agencement* is close to a "forum" (Callon et al., 2009), gathering different actors, more or less representative, to produce a collective decision about the floods comprised as a public problem with debatable causes and behaviours. It assumed that the city and the state as a set of sociopolitical institutions would be able to conduct the resulting major urban policy, which they did in part, integrating the resuming of pumping and some of the insights of the project to the Decennial Plan for Flood Management declared in 2012 by the President of the Republic Macky Sall (Bottazzi et al., 2019). The silent adoption of some of these proposals, the end of the project in 2013 and of

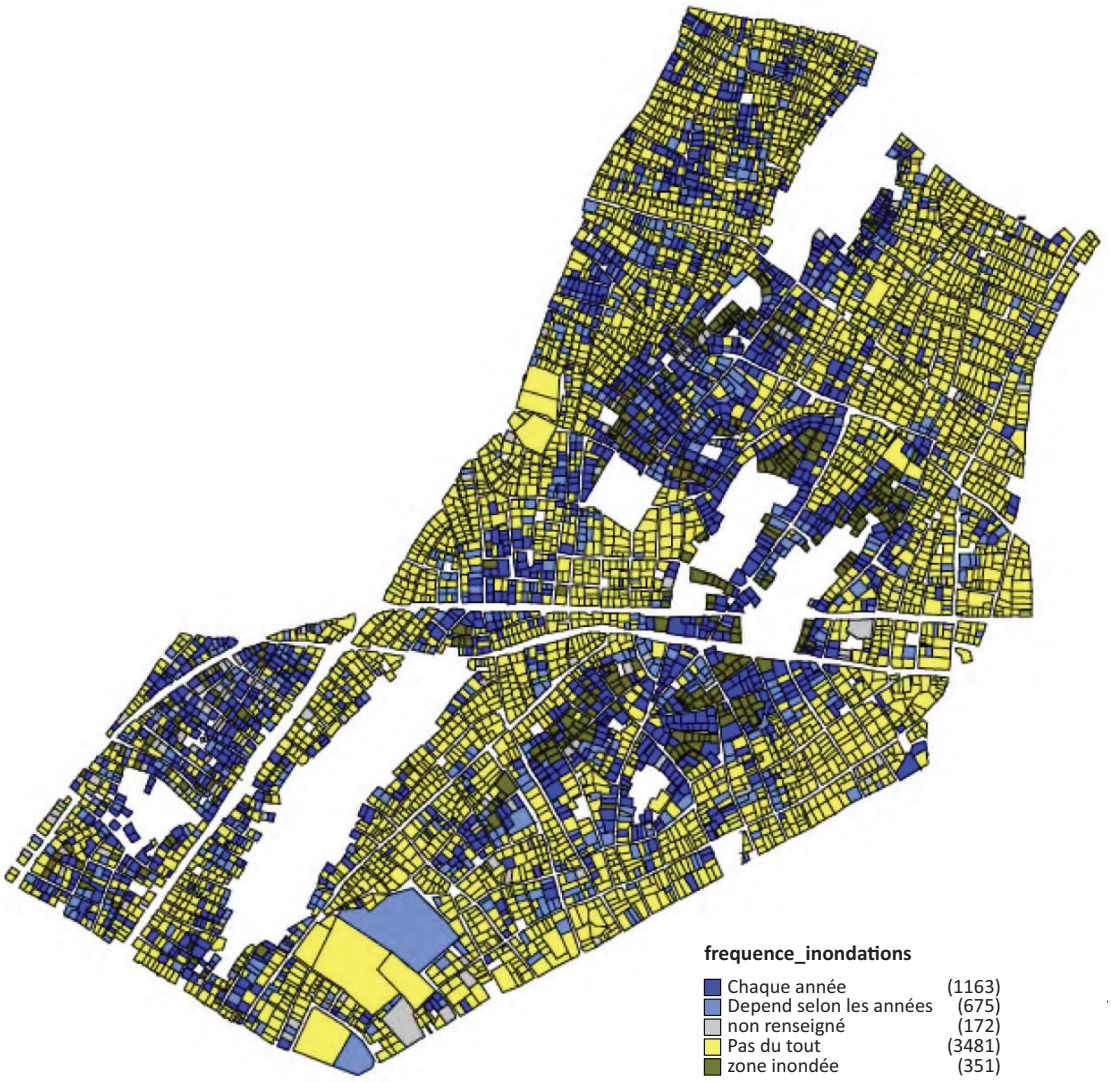

Figure 3. Mapping the action of the water. Note: This map, produced by DTK's community organisations and a Swiss NGO, is based on a plot-by-plot survey aiming to identify, among other aspects, the frequency of floods for each house of the city. The darker the colour, the more water stagnates there during the year. Caption (from the dark blue square to the green one): "Each year; depending on the years; data not provided; not at all; flooded zone." Source: Keita et al. (2012, p. 38).

the associated support to DTK's local organisations, the fall of the Regional Council of Dakar the same year due to a new decentralisation act, and the change of majority at the DTK municipality in 2014 led to the end of this *agencement*. The DTK organisations and the Swiss NGO shifted, from 2014, to another format of action.

4.2. Shifting From a Forum to a Platform: How Do Agencements *Orient the Production of the City?*

At the end of this first project, the DTK organisation groups and the Swiss NGO had to find new funding while the continuation of its action program, the urban upgrading of the commune of DTK, and the pumping of the water table was handed over to the political authorities. Indeed, pursuing this kind of project at this scale demands a huge amount of money, which only international donors can provide in Senegal. In addition, intra-organisational conflicts among the people of the DTK group and around the management of funding led to a scission. The ex-president of the group joined the Senegalese consultants and volunteers that were part of the first project to create a new NGO, allied with the Swiss one, and were able to receive funds from international donors. In 2014, members of the Swiss NGO met with representatives of a network of NGOs and federations of slum dwellers at the World Urban Forum in Medellín, Colombia. Joining this network, the new Senegalese NGO and the Swiss NGO began to transform their mode of action as well as their target.

This new way of functioning was based on the travelling model (Behrends et al., 2014) developed by the international network of NGOs, and consisting in the use of community finance (Mitlin et al., 2018) to lead urban projects for and by the so-called slum communities. According to this model, an urban project should be financed in part by the money of the dwelling people through a community savings group system. Indeed, for its promoters, community savings allow inhabitants of the same place to gather around something, to exchange about the problems of their community, and to improve confidence between them. On this basis, it becomes possible to identify solutions to community problems, to start to finance those solutions with savings, or to implement partnerships with public or private institutions or donors. In each of these partnerships, which usually take the form of a project, the savings group, supported by their NGO, should lead the project, assuming that they are best suited to know what projects should be implemented in their community. Also, if a certain level of subvention is possible, no project should be executed for free, assuming that community finance improves the ownership of projects, that is to say, that each project should be totally or partially reimbursed by whoever benefits from it. The whole point of this model thus consists in providing the slum dwellers, organised in savings groups, and technically helped by a supporting NGO, with the means to conceive and implement urban policies that target their communities, as well as to lead negotiations with actors that could finance and implement these policies.

The goal here is not to evaluate this model or its primary assumptions but to see how its implementation transformed the action of the Swiss and the Senegalese NGOs. In 2015, they built a third structure federating different informal saving groups in Dakar suburbs and other cities of the country. Trying to adapt the model to the flooding problem, they started to implement a credit system which would allow the rebuilding of flooding-affected homes. Through Swiss funding, the NGOs built a federation's fund dedicated to this project, which was used to finance the reconstruction of a room destroyed or abandoned by flooding, the backfill of a courtyard, or the raising of walls. The beneficiaries of these loans then had to reimburse through their savings group. However, the credit was not the only difficulty. The NGO also had to be sure that the loans were dedicated to a viable construction project. Thus, they engaged construction engineers to define the work that could be done with the loan beneficiary, to control the quotes, and to train masons. In addition, they refined their data collection techniques through the use of drones, digital questionnaires, and engaging the savings groups and their communities into cartography and the surveying of more and more municipalities. After a difficult start, the number of individual rebuilding or rehabilitation projects increased in DTK. Between 2016 and 2018, more than 200 houses were aided by the Senegalese Federation and its supporting NGO, and 400 more between 2018 and 2021, with the organisation growing and attracting more and more donors and international organisations.

If the project and the structures still running today are considered as a success story (Behrends et al., 2014), the *agencement* is no longer the same. Integrating a new network and trying to model themselves as durable holders of international funds, the Senegalese NGO and the savings groups are now concerned with the effects of the floods on individual households and not with the behaviours of waters and their consequences at the scale of municipalities. Their objectives are now more centred on housing for the poor than on floods, relegated as a justification for their action. Their structure aims to channel international or local funds toward individual constructions, assuring the payback and the effectiveness of the service.

Currently, the data collection can integrate demands from other organisations, such as municipalities or international organisations, concerning different topics like sanitation, education, etc. The negotiations are now taking the form of partnerships, not open discussions, around projects and not around the government of the city as a whole. In fact, the collective decision of a political community is no longer a question through this *agencement*, but the sharing of resources attracted and distributed according to defined formats and processes between the different participants (Urfalino,

2020). The form of the city held by this *agencement* is no longer the same: It went from a planned city, collectively shaped by representatives trying to seize and control the different entities that composed it, to an aggregation of households, shaped by the networks allowing individuals to act on their own and to fight against an untamed environment. This last *agencement* points towards a platform structure, qualifying, targeting, and articulating "needs" of "slum dwellers" and "concerns" of "service providers" (Callon, 2017). Analysing how these specific structures are shaping landscapes (Berglund, 2019; Tsing et al., 2019) and orienting the production, maintenance, or disintegration of cities as social and material organisations appears to be an important task for urban studies.

5. Conclusion

In this article, I attempted to distinguish three "behaviours" by which waters are fluidifying Dakar's suburbs through floods. The first is that of "intrusion," when waters brutally intrude into the daily lives of inhabitants, carrying filthy matter, damaging, or destroying goods, even inside homes. The second is that of "spatial-temporal expansion," when water advances force the inhabitants to resist this expansion or to leave when money or strength runs out. The third is that of "stagnation," when the water, because it has established for too long or because the water table is too high, rises through the floors and walls, becoming part of the very structure of the houses and participating in their slow disintegration.

We saw different forms of collective action pairing to two of these behaviours, at the scale of houses and neighbourhoods. Together, they formed specific *agencements*, articulating water, sands, and motor-pumps to dwellers, transporters, and one of them to public authorities, local organisations, and sectoral services. I called the first one, for want of a better term, "backfilling *agencement*." Oriented toward the containment of water outside one's house, it allows individuals and households to protect themselves from floods but can also have detrimental consequences on neighbours, reorienting the dynamic of waters and modifying, from one house to another, the topography of the city itself. Obviously, it favours wealthier households that have enough money to elevate their houses, but it also takes place in a situation where house ownership is often a major pole of stability for people that benefit from irregular wages in a context of land-price explosion, allowing the maintenance of social ties and ensuring housing. This explains the huge amount of money spent annually, even by poor households, to protect their house and to stay in their neighbourhood even if it means being underwater during a part of the year (A. Cissé & Mendy, 2018). The second one is a co-produced flood response service. I took the example of motor-pumping of stagnant water to emphasise the negotiated character of public service here as well as the sometimes-inefficient character of the pairing with water behaviours. Indeed, targeting the "relief of community," this *agencement* is built through inter-individual negotiations with local institutions representatives, often unable to act through commensurate means at the scale of the entities involved, here the groundwater table. This kind of *agencement* had been well described for a long time by researchers interested in governance and public service delivery in Africa (Bierschenk & Olivier de Sardan, 2014; Blundo & Le Meur, 2009), and had proven its effectiveness for different services in contexts characterised by scarce resources and the multiplicity of actors involved in their deliverance (Schaer & Hanonou, 2017), but it is important to note that entities implied here are simply too big to be grasped by this form of collective action.

This last *agencement* raised a scale question. I tried to explore this question by observing the evolution of the collective action of a local organisation group and an NGO both engaged in an exploration of the dynamics of the floods at the DTK scale. Gathering experts, DTK dwellers, and decision-makers to collectively explore a problem in what I called an urban forum *agencement* (close to an "hybrid forum", see Callon et al., 2009), they tried to reach a solution at the city and the groundwater scales. But after a few years, this *agencement* shifted toward a new one which we can call an "international slum service platform," linking and modelling international and national offer to local demand in precarious neighbourhoods through ongoing negotiations and partnerships between service providers and "poor urban communities." During this process, the place of floods and water behaviours changed. From the central object of the collective action of these organisations, they became a secondary one, justifying a housing-oriented *agencement*. When we are looking at the trajectories of the actors involved, this shift is full of contingencies and choices in a set of constraints and possibilities, but looking at the shifting form of the *agencements* itself and the trajectories of organisations involved, from community-based organisation to NGO, from NGO to member of an international network, and from a forum to a platform, we start to see common patterns that are reminiscent of the trajectory of similar organisations in different contexts (Eliasoph, 2011; Stockwell & Dimier, 2020; Talpin, 2020). Again, these *agencements* are not even regarding their goal and the form of action that they support. Indeed, they are individuals, community or society focussed, specifics or generalists, "problems" solving or "needs" oriented. From these intermediate objects, always precarious at their scale but relatively stable as a form, it becomes possible to link capital-oriented infrastructures, particular sets of constraints, concepts or models that allow some *agencements* and discourage others, that support specific kinds of actions, and assemblages oriented toward and through the urbanisation process. It also becomes possible to analyse the unexpected consequences of the interactions between these different *agencements* and flux in specific urban settings (Naepels,

2018). Trying to name and understand these intermediate forms that orient how cities are produced, maintained, or disintegrated appears to be a step toward an understanding of cities as unstable, evolutive, and precarious milieus.

Conflict of Interests

The author declares no conflict of interests.

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Article

The Changing Nature of *In-Between* Spaces in the Transformation Process of Cities

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Abstract
In the *in-between* spaces of cities, there are many problems of various nature and scale: functional, spatial, economic, environmental, visual, and social. There are also some hidden potentials that can be activated. The aim of the article is to explore the possibilities of solving existing problems and to show the possibilities of using the potentials of *in-between* spaces with regard to the changing nature of a city. The article, of a discursive character, aims to answer the questions of whether connecting a city with public spaces can be a catalyst of changes, and what tools should be used to facilitate the flux of material factors (like goods or natural resources) and immaterial matter (e.g., ideas or cultural patterns). The new approach is based on the assumption that this would be most effective when using landscape architecture, green/blue infrastructure, artistic strategies, and universal design in public spaces. The expected result of the research is to show the purposefulness and possibilities in creating attractive and safe public areas of *in-between* spaces as an on-going micro- or macro-process of urban change on a wider scale. It was recognised that integrated actions combining the humanistic, ecological, and technical approaches could bring significant benefits to society, preventing existing problems, not only spatial and visual (changing the city directly), but above all social and environmental, having an impact on the functioning of the city from a much longer perspective. The results of the research show how the transformation process of public spaces may change the nature of the cities, improve the compactness of existing cities, and increase the quality of life. Selected case studies are presented to show the scale, scope, and benefits of possible actions.

Keywords
connecting urban structure; in-between spaces; public space; urban transformation

Issue
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1. Introduction

1.1. Background

Contemporary cities are cut by numerous barriers, forming a “no man’s land” at the borders of various urban structures. They destroy the compactness of an urban tissue, the functional, environmental, and social unity, and reduce the landscape values. Uncoordinated fragmentation lowers the quality of urban space, deforming the image of the city, and has negative environmental and social effects. No satisfactory solutions and mechanisms to stop urban disintegration have been discovered so far. Therefore, a discussion of preventing such problems is necessary.

The state of art of the nature and scale of the problems in *in-between* spaces and the possibilities of connecting fragmented urban structures by using public spaces is insufficient. This article aims to answer the following questions:

- How can we connect fragmented urban structures?

- How can this transformation change the nature of neighbouring urban structures (especially disadvantaged ones) and whole cities?
- Does mitigating the effects of barriers through the creation of friendly, safe, and attractive *in-between* spaces, using public spaces, facilitate the flow of public goods, people, and ideas between fragmented parts, changing the image of the city?

The concept of "connecting" may be understood differently, depending on the studied aspects: functional, visual, or social. In each of these cases, connecting will be something non-identical. A connection that works well for environmental purposes may be less suitable for other connecting purposes, like infrastructural and vice-versa.

Another important issue when developing *in-between* spaces is the relationship between material and immaterial aspects. Creating only physical structures is not enough. Genius loci and "a sense of being in unity, expressed in sharing ideas, demonstrating similar sentiments and living in similar ways" (Dymnicka, 2017, p. 29) is no less important than the spatial framework. Dymnicka (2013) emphasizes that not only functions of *in-between* spaces are important, but also the importance of public space for shaping local identities. Löw (2018) emphasizes that the material dimension covers only what we see, but ignores such important aspects of space as atmosphere, smells, sounds, and other sensations. According to Löw, all spaces have a symbolic and material component which together will decide the possibilities of creating space. Therefore, in order to understand space, cooperation with sociologists is important in the transformation of *in-between* areas.

1.2. Objectives and Expected Results

The problems related to the fragmentation of cities are most visible in the *in-between* spaces that divide urban structures, being barriers to city flows. The objective of the article is to identify the nature and scale of these problems and to examine the possibilities of solving them by connecting fragmented structures.

The expected result of the research is to present possibilities and effects of implementing tools from a variety of fields: technical (transportation/civil engineers), humanistic (sociologists, psychologists), environmental (geographers, biologists, ecologists, hydro geologists, climate experts), and interdisciplinary approaches (architects, landscape architects, and urban/spatial planners), when shaping public spaces in *in-between* spaces to connect fragmented urban structures. The article presents selected tools which may be successfully used to improve the ecological and social security of abandoned spaces.

The originality of research is based on the broad approach, combining the spatial, functional, sociological, technical, and economic aspects, and the choice of various, carefully selected case studies. Moreover, the article gives some implications for practice, highlighting the possibilities for transforming the *in-between* spaces into attractive, vivid, and multifunctional public spaces, connecting the cities and changing their image.

2. Theoretical Framework

A starting point was the identification of the research problem, defining the *in-between* spaces, determining the scope of research, and collecting literature and research materials. The term *in-between*, to describe spaces, was first used by Loukaitou-Sideris in 1996 to explain the concept of *cracks* as "*in-between* spaces, residual, under-utilised and often deteriorating," and as abandoned, vacant, and poorly managed spaces (Loukaitou-Sideris, 1996, as cited in Carmona, 2010, p. 125). In 2001, Hajer and Reijndorp stated that the *in-between* spaces have the character of "liminal spaces," which are border crossings (Hajer & Reijndorp, 2001, as cited in Carmona, 2010, p. 126).

For a broader understanding of the notion of *in-between* spaces, it is also worth quoting another perspective from the field of social geography introduced by Entrikin (1991): "the betweenness of space." According to him, place is the context of our actions and the source of our identity and exists always on the border between "an objective and a subjective reality" (Entrikin, 1991, p. 5). Moreover, "to ignore either aspect of this dualism is to misunderstand the modern experience of place" (p. 134). This divide between the existential and naturalistic conceptions of place is an unbridgeable one.

The concept of *in-between* spaces can also be combined with the concept of porosity that identifies qualities and architectural attributes that seem indispensable for the complexity and adaptability of urban spaces: "The layering and mélange of spaces, the perforation of borders, and the ambiguity of thresholds are perceived as specific urban qualities"; "porosity in its programmatic turn addresses both physical and social space" (Wolfrum, 2018, pp. 9–10).

However, in this research, *in-between* spaces are defined as a border between different urban structures of various forms of use and development, dividing the city, forming negative barriers of a broad spatial scope at city scale. Referring to the spatial classification proposed by Azhar and Gjerde (2016), *in-between* spaces are discontinuous spaces (the opposite of continuous spaces in transition), interzone, temporal, not well related to the setting. The same classification was proposed by Piccinno and Lega (2012, p. 6), who stressed the potential of *in-between* spaces to become cities' "new meaningful places," of cultural meaning "with specific meanings for specific groups," and with a spatial relationship with their surroundings.

The term "space" in this research is being understood according to the theory proposed by Löw (2018), which in her considerations emphasizes the dynamics

of space creation processes. Space includes living organisms and social goods (which include things and symbols) that exist in relation to each other. To understand space, you need to know not only its elements, but also the relationships between them. According to Löw (2018), the constitution of space is never static, but processual. Spaces can be more or less stable, temporary, or permanent. Such thinking corresponds to the concept of transforming an *in-between* space into a public space presented in the article. Löw (2018) places particular emphasis on the changes in the constitution of space as a result of human action, which, according to her, allows the study of changes in spatial phenomena. According to Löw (2018), the formation of space is a reflection of social processes, and space is constituted by creating connections. For her, the important questions are: What is transformed—things or events? Who transforms them? How do spaces change? How do they influence social structures? People play two roles here: they are both creators of space and its elements.

The next step was to determine the typology of *in-between* spaces in the physical sense, different to those quoted above, due to: (a) origins, i.e., natural (the edges of the sea, riverbanks, hills, forests) or anthropogenic (roads, railways, tram lines, embankments, water channels); (b) shape and size; (c) the neighbourhood, its functions, and usage; (d) the attractiveness for other potential functions (such as industry, trade, recreation); and (e) social problems and danger, i.e., the stigmatisation of a space.

The next phase was to identify, analyse, and systemise the negative effects of the cities' fragmentation of different natures and scales. They have been generally divided into: (a) functional (city's fragmentation, functional disconnections, wrong functioning of neighbouring areas); (b) spatial (huge demand for land, reduction of the density and compactness of cities, lack of continuity of public spaces); (c) economic (difficulties in access to jobs, vandalism generating repair costs); (d) environmental (interruption of natural links, destruction of natural values, occupying valuable undeveloped areas of cities); (e) visual and compositional (disconnection of compositional links and relations, chaos, transformation of an urban landscape into a technical one); (f) social (social problems, lack of security in *in-between* spaces and surroundings); and (g) prestigious (lowering the quality of urban space).

The following causes of urban fragmentation were identified: (a) dynamic and uncontrolled spatial development in incidental places, not connected with city structure; (b) growing and often unjustified transportation network development (size and technical parameters of roads, car domination); (c) shifts in the economy and macro-level influences; (d) lack of a hierarchy of priorities in spatial policies; (e) low effectiveness of existing legislation, planning and design tools, and administrative structures, especially in relation to *in-between* spaces; (f) low awareness of the consequences of cutting up urban structures among policymakers; (g) lack of policy co-operation between specialists from different disciplines, sectoral thinking, lack of adequate public participation; and (h) missing funding, inadequate priorities in the distribution of public funds, dispersed land ownership.

The next step was to develop basic criteria for the selection of case studies, to verify the validity of the approach taken: (a) location in the city (whole/part of the city, edge of the city); (b) functional criteria (the function of the barrier and its surroundings); (c) spatial scale (length, size); (d) level of interventions (regional/city/district/local); (e) scope of aspects (landscaping, ecology, engineering, social, visual); (f) urban tissue (natural/anthropogenic); and (g) scope of work (vision, preliminary studies, alternatives, masterplan, guidelines, concept, agreements and arrangements, project design, construction, operation).

It was also necessary for further research to define revitalisation, inherently connected with the transformation of the *in-between* spaces. Revitalisation is one of the ways to overcome the city's crisis. The term "revitalisation" is justified in the New Charter of Athens (The European Council of Town Planners, 1998), which raises the issue of renewing the city's structure and its urban form. Revitalisation consists of planned activities aimed at changing the functional and spatial structure of degraded city areas and, consequently, their economic and social recovery (Billert, 2004). The concept of revitalisation refers to activities that are carried out on the existing, degraded urban spaces, including both the city center and downtown districts, as well as former residential districts, located outside the city center (Skalski, 1996).

Afterwards, the best tools for connecting urban tissue were analyzed. Then, three different examples, regarding above mentioned criteria, were examined and compared, referring to the obtained results and guidelines of the most important EU planning documents.

3. Tools for Public Space Transformation

There are a lot of planning and design tools which can be used to transform public spaces in order to connect a city: state policy, spatial/urban planning, architecture, landscape architecture (LA), green/blue infrastructure (GBI), metropolitan plans, local zoning plans, and complementary methods such as artistic strategies (AS) in public spaces and universal design (UD). Four of them have been chosen as the most effective in shaping *in-between* spaces. These four can relatively easily change the functions and image of *in-between* spaces and their surroundings, reflecting the changing nature of urban transformations.

3.1. Landscape Architecture

LA is a well-known field with a long history and great potential to support spatial planning (Dramstad et al., 1996). Despite the rich scientific achievements of LA, the

landscape is often marginalised by investors, policymakers, the local communities, and society. That is most evident in abandoned *in-between* spaces. In order to achieve effective protection and creation of landscape, the landscape should be given appropriate status in spatial planning. Cooperation between the interdisciplinary teams, representing the environmental and technical sciences and the humanities, should be guaranteed, preventing the creation of barriers. In the case of existing barriers, LA should be used to create well-functioning and attractive public spaces connecting the city in poorly developed *in-between* spaces.

Examples of using LA to transform neglected spaces in order to merge urban tissue include projects such as: Green Axis 13 in Munich, Germany; Kiel Triangle Plaza in St. Louis, Missouri, USA; Piccadilly Gardens, Manchester, UK; Parque de la Ereta, Alicante, Spain; MFO Park, Zurich, Switzerland; Park One North, Singapore; Sungang Central Plaza and Diwang Park B, Shenzhen, China; Hai He River Embankments, Tianjin, China; and Welland Canal, Welland, and HTO, Toronto, Canada (Vidella, 2009).

3.2. Green/Blue Infrastructure

Properly designed GBI as a continuous system of urban green and water areas, allows, e.g., sustainable stormwater management through increasing rainwater retention, reduces flood risk, supports biological processes, improves humidity and air quality, mitigates extreme weather phenomena, and reduces climate change. Green infrastructure (GI) produces not only ecological, but also economic and social benefits, creating healthier urban environments (United States Environmental Protection Agency, 2021). It reduces energy consumption for cooling and heating, reduces costs in the conventional treatment of stormwater, mitigates negative health impacts caused by urban heat islands, and provides recreation values (Wise et al., 2010).

There is a wide spectrum of possibilities to use GBI when creating public spaces in *in-between* spaces, with benefits for both systems. The public space will be attractive and biologically active when accompanied by greenery and water. Thanks to public space created as a continuous system in the city, GBI will also achieve continuity, better fulfilling its role: natural and utilitarian, such as recreational, aesthetic, didactic, and cultural. An example are the barriers formed by road systems. Road infrastructure is always accompanied by engineering infrastructure. It has been proven that the most effective water management strategies in cities are based on technical infrastructure going hand in hand with GBI, complementing each other and creating a coherent system (Alves et al., 2019). This shows that engineering infrastructure can be used when designing *in-between* spaces as attractive public spaces with GBI, creating natural corridors.

It is therefore justified to combine GBI with a system of various types of public spaces, which are still being created in cities as a continuous system (streets, waterfronts, boulevards). When creating and modernising public spaces, it is necessary to rebuild outdated infrastructure systems, creating GBI systems. Hardened public surfaces should be converted into biologically active ones, combined with GBI, improving the attractiveness of these spaces.

Examples of GBI projects in city central public spaces include: Praça das Águas, Campinas, Brazil; Place Aristide Briand, Valence, France; Place de François Mitterrand, Creusot, France (Vidella, 2009); B01 Malmö, Sweden; and Brooklyn Bridge Park, New York City, USA. Another example, Landesgartenschau Wernigerode 2006, in Germany (Vidella, 2009), is located in an open landscape (recultivated landfill).

3.3. Artistic Strategies in Public Space

Art influences the diversity of a space and enhances its identity by introducing new forms, various textures and materials, and carefully selected colours. Artistic installations in a public space facilitate the transformation of a non-place into a place. The essence of reviving a public space with art is, among others, that it draws people to the space, adds attractiveness, and brings another dimension to everyday life. A kind of attraction effect is also noticeable: The introduction of art into a space increases the interest of artists and the development of subsequent projects. Therefore, the role of art in the city is not limited only to aestheticizing spaces.

Currently, the meaning and role of art is changing significantly. Artistic and cultural activities are treated above all as catalysts for changes introduced in degraded areas, as the creative creation of places. According to Miles (1997), art in public space can humanize it and engage people with each other and their city and encourage ownership of the city by its people. The role of art in the revitalisation process becomes a measurable factor. AS increase the value of real estate in revitalised areas as people are more likely to visit a given part of the city. Art stimulates creativity and allows to build interpersonal bonds. According to Markusen and Gadwa (2010), creative placemaking partners from public, private, non-profit, and community sectors strategically shape the physical and social character of a neighbourhood, town, city, or region around arts and cultural activities. Thus, as in public spaces, it provides a new perspective connected with stimulating community involvement and influencing the vitality of space, as a process of permanent transformation, changing the nature of cities from local to regional scales.

There are numerous high-quality and long-lasting revitalisation projects based on art to be found in American cities, such as New York City (High Line project), Philadelphia (The Mural Arts Program of Philadelphia), and Boston (Public Art on the Greenway), and in European cities, like Copenhagen, Denmark (Superkilen project), Folkstone, UK (Other People's Photographs), and Bilbao, Spain (Ribera Park), among others.

3.4. Universal Design

UD is a term that was first interpreted by Mace in 1970 (Connell et al., 1997). UD can be accessed and used to the greatest extent possible by all people regardless of their age, size, ability, or disability. An environment should be designed to meet the needs of all people who wish to use it. If an environment is accessible, usable, and convenient, everyone benefits. The seven principles of UD are equitable use, flexibility in use, simple and intuitive use, perceptible information, tolerance for error, comfortable use without effort (low physical effort), and size and space for approach and use (Connell et al., 1997).

A space that meets the needs of people with disabilities actually becomes a more friendly and safer space for other members of society. This change of philosophy in shaping public space should now be aimed at meeting the needs of all users, regardless of their capabilities in terms of mobility and perception, both physically and psychologically. This is the basis of the idea of equal access to the physical environment and universal services (United Nations Convention on the Rights of Persons with Disabilities, 2006). The concept of UD is an approach that paves new thought paths in design.

Moreover, UD can be successfully used as a tool for merging the city, especially in its social aspect, with the priority of shaping the city accessible to everyone and enabling the open flow of people and ideas. UD is targeted at and brings benefits not only for the disabled, but also for the residents, e.g., children using scooters, roller skates or skateboards, adults using shopping trolleys, cyclists, tourists with wheeled suitcases, and visitors, especially regarding an aging population (Stiles, 2009). One example is Festplassen, Bergen, Norway (Vidella, 2009), which is a recreation area. Another example is the cities of Gdynia and Gdańsk, Poland, which have prepared accessibility standards.

3.5. Comparison of Design Tools Connecting Urban Tissue

There are many tools that can contribute to the consolidation of a city. They are usually used fragmentarily, in various time and spatial ranges, which makes the activities ineffective. Below is a comparison of four tools considered by the authors to be effective in integrating urban tissue and responsive to constantly changing social, ecological, and economic needs (Table 1).

LA, GBI, AS, and UD can be used at many scales, are dependent to a small extent on infrastructure systems, are relatively inexpensive, and, in return, may improve the functioning, image, and ecological values of *in-between* spaces through the humanisation of the design process. However, they depend greatly on external factors and systems, such as public fundings and politics. They help implement the use of social sciences into urban planning, increase the meaning of landscape values in urban planning practice, and support the concept of Azhar and Gjerde (2016), promoting the modification and transformation of urban landscapes, considered not as a static, but as a vital phenomenon.

It is essential that the implementation of LA, GBI, AS, and UD strategies depend on a full array of other parallel processes, like change of ownership, funding, or political will. Therefore, it should be emphasized that, without orchestrated interaction, design tools are relatively powerless.

Of course, in our considerations there is no difference between the use of described tools as design tools and their use as a real space intervention. We assume that all stages of planning and implementing these tools are necessary.

4. Case Studies

Below, three examples implementing the idea of building a compact city and facilitating flows between

Table 1. Comparison of design tools in the context of the city's transformation process.

Tools	Primary Types of Intervention	Scale of Intervention	Dependence on Other Systems/Difficulties	Expected Dominant Results
LA	Small- and large-scale projects	Region, city, a city fragment	Lack of dependence/ few difficulties	Improving the visual quality, humanisation of the space
GBI	Green walls/roofs/areas Small and large retention, drainage, renaturalisation of watercourses/reservoirs	Region, city, a city fragment	Technical infrastructure/ land use/difficulties	Improving the quality of the environment and urban climate
AS	Small scale projects	City, a city fragment	Lack of dependence/ few difficulties	Increased social interest, art education, aesthetic improvement
UD	Projects adapted to the needs of the disabled	City, a city fragment	Architecture and small architecture/few difficulties	Improving functionality, preventing exclusions

fragmented parts by shaping public spaces are discussed. The main criterion for selecting them was the richness of circumstances and the opportunities to bring the cities together.

4.1. Turia Gardens in Valencia, Spain

The Turia Gardens is the biggest urban park in all of Spain, used by a population of 1.5 million people, and it counts almost seven million visitors every year. Crossed by 17 old and new bridges full of history, divided in 18 sectors, built in different phases, it passes through the city's main museums and monuments on both banks. The vast gardens are built on the former riverbed of the Turia, whose course was diverted south of the city to prevent constant flooding in the city, leaving a huge tract of land that crosses the whole city. Initially, the old riverbed was supposed to become an urban highway, but the intervention of the inhabitants transformed the empty space into a park. The gardens were inaugurated in 1986. There are numerous activities that take place along the area of Turia Park. The most attractive are Cabecera Park, Bioparc with an African savannah, an underwater world and ecosystems in the Oceanogràfic, an opera auditorium, and Palau de les Arts housed in the futuristic City of Arts and Sciences. They are supported by facilities such as bicycle lanes, running tracks, soccer fields, roller-skating areas, a giant chessboard, a skateboarding zone, and a rugby field.

The Turia Park River plays an essential role in the regional GI system that links the main natural, rural, and urban open spaces of the whole region, facilitating their public use (Galan Vivas, 2011a, 2011b). The Turia Park River is "a unique example of transformation of an obsolete hydraulic infrastructure into an open public space" (Galan Vivas, 2011b, p. 50). By implementing this project, the city created new, important, and living public spaces merging the city.

The project of Turia Park is a great modern example of the transformative effect of landscape infrastructure on a city's identity and well-being. Valencia has managed to integrate a recreational and transportation infrastructure network with its historic center and surrounding neighborhoods. It is hard to now imagine the city without its green river. The Turia Park is a space that brings together both its residents and visitors from around the world. At the same time, the park's accessibility and economic impact are enhanced by its linear form (Phelps, 2012).

4.2. Vistula River Boulevards in Warsaw, Poland

The Vistula River Boulevards in Warsaw are one of the most attractive and most frequented public spaces in the city, buzzing with life on summer evenings and weekends thanks to the growing entertainment and cultural offering. This area was a neglected river waterfront without access for the public, separated from the city by a multilane road. The first efforts with the aim of "orienting the front of the city towards the river" (Bednarz, 2018, p. 6) took place in the 1990s when the building of the Warsaw University Library was fluidly composed into greenery and the Copernicus Science Centre along with the Discovery Park were constructed on the western bank. The Vistula River Boulevards located near these projects have three levels, built in the form of terraces. In 2010, a new recreation path in the green zone was implemented on the eastern side of the river, significantly stimulating the activation of this area. It also provided proof that it is not only large-scale projects that are able to revitalize a public space.

The design concept of the Vistula River Boulevards brings the city closer to the riverfront by creating varied-function facilities and a green belt between the Copernicus Science Centre and the rail cross-city bridge. The particular zones of the garden—an urban spot for sports, a clearing for the arts, and the Discovery Park—are an extension of the functions of the buildings surrounding it—the Copernicus Science Museum, the Academy of Fine Arts, and the University Library—and the planned sports facilities located at the southern end of the facilities on the western bank. The most essential factor in the regeneration of the waterfront areas was approaching the river in a comprehensive manner and treating it as an integral part of the city (Bednarz, 2018). A connection was created between four bridges, creating a kind of pedestrian loop, facilitating communication with eastern bank Warsaw. The connection with the other bank of the river was strengthened thanks to a small ferry and marinas. The Vistula Boulevards won the Grand Prix Award for the best public space in Poland in 2018. The architectural design of the reconstruction of the boulevards is certainly one of the most important implementations after 1989. The renovation of the riverside promenade turned the city towards the river, provoking meaningful urban change.

4.3. Brooklyn Bridge Park, New York City, USA

Brooklyn Bridge Park is located on the south side of Long Island, New York City, in the Brooklyn borough, on a post-industrial waterfront. It covers 85 acres and stretches 1.3 miles along Brooklyn's East River. It is connected to Manhattan by the Williamsburg, Manhattan, and Brooklyn bridges, and the Brooklyn-Battery Tunnel. The Port Authority of New York City and New Jersey considered it as an ideal location for high-rise building or commercial development. However, the idea to build Brooklyn Bridge Park came from local residents and neighborhood leaders looking for less intensive uses of this area (Witty & Krogious, 2016).

The history of the project dates back to 1984, when the cargo port was closed. Construction work began in 2008 and ended in 2015. The Park is financially self-sufficient, thanks to the implementation of commercial housing, financing ongoing maintenance of the park.

The creation of Brooklyn Bridge Park has completely changed the image of the aquatic areas of an important part of New York City. It enriched the functional program and attractiveness not only of Brooklyn, but also of nearby Manhattan. Many recreational and sporting attractions were created there (playgrounds for children, places for launching boats, bicycle rental, basketball courts, handball, ice rink, swings, picnic tables, and fitness equipment), introducing a new quality to the once-degraded areas. Many free events and public programs are organized in the open space designed for relaxing on the lawn. A variety of solutions have been used to imitate the natural aquatic environment, aimed at increasing biodiversity, while also creating a buffer zone to reduce the effects of storms and floods. Ecological education is an important effect. The main effect of the revitalisation of the *in-between* areas separating the city from the river was the introduction of a rich functional program and connection of Brooklyn with the water. It is also a kind of functional extension of the Brooklyn Bridge, one of the main tourist attractions of New York City. It connects the city in two directions: along Brooklyn's East River and transversely between the river and Brooklyn.

4.4. Case Study Comparison

The analysis of the three selected case studies shows how the tissue of the city can be combined in a desirable and effective way by transforming *in-between* spaces into public space. The use of GBI, LA, AS, and UD as catalysts of revitalisation were examined. This provided the opportunity to determine the circumstances of their design and implementation (Table 2).

The described examples indicate that simultaneous and comprehensively applied tools can constantly and positively change *in-between* spaces, and, therefore, whole cities. In all cases, a combination of various aspects and types of activities was used to revitalise the devastated areas. Accessible, safe, functional, and attractive public spaces, thanks to the use of LA, GBI, UD, and AS, enabled the open flow of people and ideas between neglected *in-between* spaces and the city (Figure 1).

Analysing the cases above in the context of spatial circumstances, it appears that the length of revitalised area and the connection with surrounding public space system has significant impact on the city flow. In each case, benefits were obtained for the entire city, but the revitalisation of the Turia Gardens, cutting almost the whole city, has the strongest influence on connecting structures in city scale. New areas in all cases became a scene of urban life, but the Turia Gardens enable the connection with a bigger amount of important public objects and spaces. Although it is obvious that even local actions that make good use of a place potential can bring supra-local benefits, the truth is that the complex system of public spaces connecting the city brings more fundamental benefits. Thus, in the transformation process of a city it is important to increase the quality of the public space system, creating a sort of urban core and revitalising the neglected public spaces to maintain the continuity of the system and in the same way the city flow.

5. Discussion

Cities are changeable by nature and always have been, based on the flow of goods, people, and ideas between their parts. It is important that these parts should be connected so that this flow is not impeded. Cities are always changing, and it has to be this way in order to meet the changing needs of their inhabitants. Different land uses appear and change, some functions replace others—this is how it should be. Sometimes, however, an area remains empty, unused, becomes devastated, should be developed, and barriers overcome. The easiest way to do this is by shaping accessible public spaces of various character. Such spaces bring many benefits to the cities. In the examined cases, important general goals were achieved, referring to the postulates of some of the most important EU documents in the context of our study:

- Compactness of cities (*The New Charter of Athens*): *The New Charter of Athens* (The European Council of Town Planners, 2003) calls for the functional, spatial, economic, social, and environmental integration of cities, underlying that a connected city needs the diversity of connective mechanisms used at different scales. A new arrangement of *in-between* spaces should be considered as a mechanism helping to create a compact city, not only in the physical sense, protecting the surrounding rural and natural areas, but also in other contexts, such as facilitating the open flow of people, better access to work, education, health, and other services, as well as improving biodiversity.
- Limiting land take (*Roadmap to a Resource Efficient Europe*): In relation to cities, it was recognised that land is a non-renewable and valuable resource and saving land limits suburbanisation. This, in turn, reduces adverse environmental effects. The strategy of "no land take" to be achieved by 2050 has been established by the European Commission in *Roadmap to a Resource Efficient Europe* (Cortinovis et al., 2019). The space is considered to be a major non-renewable natural resource (The European Council of Town Planners, 2003), thus renewal of degraded and abandoned *in-between* city spaces limits land take in other areas.
- Limiting climate change (Paris Agreement): Better land use of *in-between* spaces, especially thanks to GI, fits into the ecosystem service approach, recognised as an effective method of implementing sustainable development through practical applications in real world problems (Rozas-Vásquez,

Table 2. Comparison of the selected cases in the context of used tools and effects in the process of city transformation.

Investigated Factors	Turia Gardens	Vistula River Boulevards	Brooklyn Bridge Park
Location in the City (Whole/Part, Edge)	Historical city centre, linear arrangement	City centre, linear arrangement	City centre, linear arrangement
Previous Urban Tissue	Natural: riverbanks, valley	Natural: riverbanks Anthropogenic: roads	Natural: riverbanks Anthropogenic: harbor area, roads
Previous Use Previous Problems	Neglected areas Constant flooding, damages, economic problems	Transportation Separation city from river, functional and prestige problems	Port and warehouse Spatial, functional, prestige problems
Neighbourhood	City centre, districts	River, city centre	River, city districts
Used Tools	LA, GBI, AS, UD	LA, BI, AS, UD	LA, AS, GBI, UD
Level of Interventions	Local and regional	Local	Local
New Functions	Recreation, leisure, sports, education, and art	Recreation and education	Recreation, sport, team games, and education
Important Public Facilities in Close Proximity	L'Hemisfèric, Museu de les Ciències Príncipe Felipe, L'Umbracle, L'Oceanogràfic, Palau de les Arts Reina Sofia, Assut de l'Or Bridge, L'Àgora, Valencia Towers	Copernicus Science Museum, Academy of Fine Arts, University Library, National Stadium, Monument to the Warsaw Mermaid (the symbol of the city)	Brooklyn Bridge, Manhattan with all its attractions, Brooklyn district
Users	Residents, families, nature enthusiasts, runners, cyclists, and tourists	Residents, families, runners, cyclists, students, and tourists	Residents, families, runners, cyclists, and tourists
Obtained Results	Green and recreational area merging the city, creating the backbone of the urban green system and social effects	Return of the city to the river, new attractive public space, recreation, ecological education, and social integration	Return of the city to the river, new attractive public space for meetings, sport and recreation, ecological education, economic self-sufficiency, and social integration
Rank of Benefits Obtained	Regional/city range, including the space in the regional GI system	City range, raising prestige, a new showcase of the capital, improving the visual quality of downtown	City range, raising prestige, new attractive function, improving the visual quality of downtown

et al., 2019). Such local action, commonly used in large number of towns, may significantly help meeting the goals of the Paris Agreement on climate change mitigation (Paris Agreement, 2015). However, international agreements are not always translated into institutionalised practical actions at the city level, so local actions become important. Sustainable development of abandoned *in-between* spaces, accompanying the continuous processes of city transformation, is one of the efforts available to mitigate climate change. Such local actions can both mitigate the causes of climate change (e.g., cutting the city by roads which create impermeable surfaces) and adapt cities to deal with the consequences of a changed climate, recommended especially in EU cities by Reckien et al. (2018). Linking the city with GI may help with air purification, moderation of extreme events,

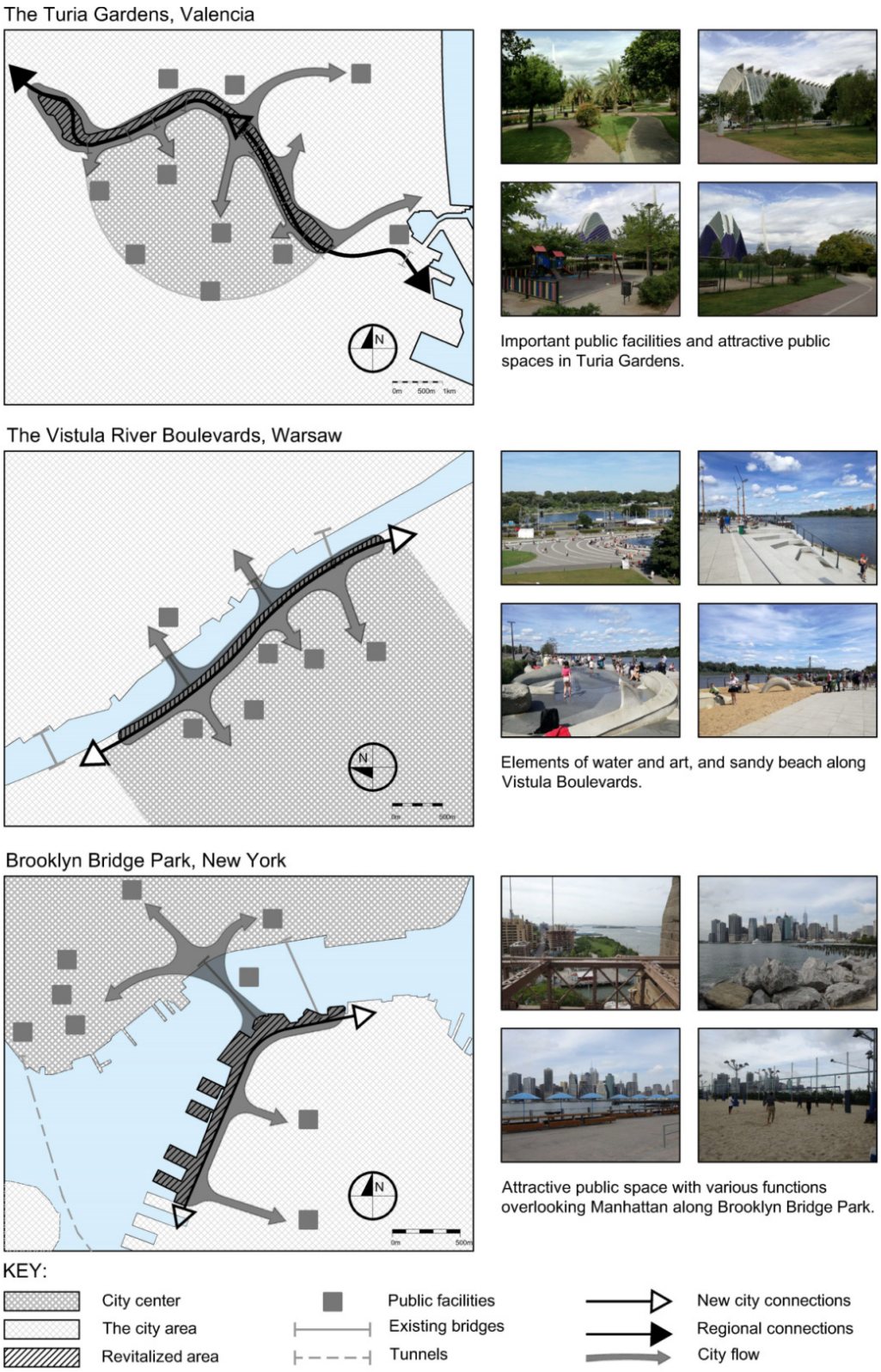

Figure 1. Comparison of the selected cases in relation to spatial and functional effects (various scales).

noise reduction, runoff mitigation and flood control, urban temperature regulation, and stormwater treatment, which are six of seven urban regulating ecosystem services (Cortinovis & Geneletti, 2019). Seven similar urban ecosystem services recognised by the same authors, which relate to the ongoing planning process, are microclimate regulation, habitat provision, nature-based recreation, noise mitigation, air purification, runoff mitigation, and food provision (Cortinovis & Geneletti,

2020). All of them may be recognised as benefits of the process of development of *in-between* spaces, changing the nature of cities towards sustainable development.

- Prevention of social exclusion (*Leipzig Charters*): In the social context, it is important to ensure the implementation of the principle of equal opportunities recommended by the EU by preventing the exclusion of people with disabilities and activating all social groups (European Commission, 2007, 2020). Especially in this context, Gehl's (2009) postulate—cities for people, sustainable, full of life, and safe—is still valid. It will be possible to achieve this when the human dimension is at the centre of urban planning and design. This is why, during a design process, the social functions should be strengthened and urban space as a space for meetings should be created. Mutual interactions between public space and public life, as well as the use of appropriate tools that allow for a better design, are very important from the point of view of a city (Gehl & Svarre, 2013).

6. Conclusions

The article provides selected solutions aiming to connect urban tissue by appropriate use of *in-between* spaces, as areas of open flow of goods, people, and ideas. The presented projects changed the character of the cities in long processes of transformation, with the use of new, safe, well-functioning, and attractive public spaces as catalysts for change. They showed how to prevent existing problems, protect and strengthen the existing values, and create new values in the *in-between* spaces, seen up to today as "no man's land," with the use of LA, GBI, AS, and UD. Such an approach brought multiple ecological and social benefits. The crucial conclusion is that the bigger the revitalised area is the more the city benefits, because you can approach change in a holistic way.

In contemporary urban planning, major road infrastructure is particularly important due to transportation and the inconveniences associated with it. Transportation turned out to be a real gap in the city and therefore there is an urgent need to reintegrate it into the urban fabric. Actions integrating an urban tissue must be included in the positive-change strategies at various levels of planning (region, city, district), related to different aspects, like spatial, economic, social, and visual, in order to connect an urban tissue and improve the quality of life in the city.

The above examples show that *in-between* spaces become public areas when they are involved in the flow of material and non-material factors in the city, when they become part of a living, functioning, constantly changing city. The sociological factor becomes extremely important in consolidating the city. Public spaces are the areas where one can share their experiences with previous generations through material heritage (such as historical monuments) and symbolic heritage (Dymnicka, 2013). The symbolic heritage of the past, creating the collective identity, consists of many factors, being the product of human imagination (e.g., past events, personalities, memories, mythologies, art, and symbolic places; Dymnicka & Szczepański, 2015).

The physical and mental merging of fragmented structures ensures the continuity of the city in the spatial and social dimension. It is no coincidence that Dymnicka (2017) describes culture as a tool for revitalisation, emphasizing that people find common, local goals extremely important, and that actions should take context and new social needs of users into account. Therefore, the newly created public spaces should comply with bottom-up projects and be supported by public participation, so that people use them in a way that they—users—consider to be the best. This type of projects provides an opportunity to sustain positive changes in the city's space in the long run and have a positive impact on the city's development. A well-designed and functioning public space is the essence of the city and is the centre of urban life. When designing public spaces, many aspects of a city should also be considered, including resilience and sustainable development (Rembeza, 2020).

To sum up, a well-designed public space brings intangible assets to the city. That is why efforts to transform neglected *in-between* spaces into public spaces are becoming so important. At the same time, properly managed *in-between* spaces can become a predominant element of the city's revitalisation, and above all its public space.

The research indicates that combining various aspects and integrating humanistic, technical, and ecological approaches can help improve the compactness of cities and activate hidden potentials. Cities are constantly changing and therefore should be planned not as static objects, but rather as the process of micro- and macro-changes transforming urban structures and *in-between* spaces should play a key role in this process.

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Conflict of Interests

The authors declare no conflict of interests.

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Article

Planning Adaptation: Accommodating Complexity in the Built Environment

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Abstract
Obsolescence and vacancy are part of the traditional building life cycle, as tenants leave properties and move to new ones. Flux, a period of uncertainty before the establishment of new direction, can be considered part of building DNA. What is new, due to structural disruptions in the way we work, is the rate and regularity of flux, reflected in obsolescence, vacancy, and impermanent use. Covid-19 has instantly accelerated this disruption. Retail failure has increased with even more consumers moving online. While employees have been working from home, rendering the traditional office building in the central business district, at least temporarily, obsolete. This article reflects on the situation by reporting findings from an 18-month research project into the practice of planning adaptation in the English built environment. Original findings based on interviews with a national sample of local authority planners, combined with an institutional analysis of planning practice since the 1947 Town and Country Planning Act, suggest that the discipline of planning in England is struggling with the reality of flux. There is a demand for planning to act faster, due to the speed of change in the built environment, and liberal political concerns with planning regulation. This is reflected in relaxations to permitted development rules and building use categories. However, participants also indicate that there is a concurrent need for the planning system to operate in a more measured way, to plan the nuanced complexity of a built environment no longer striated by singular use categories at the local level. This notion of flux suggests a process of perpetual change, turbulence, and volatility. However, our findings suggest that within this process, there is a temporal dialectic between an accelerating rate of change in the built environment and a concomitant need to plan in a careful way to accommodate adaptation. We situate these findings in a novel reading of the complex adaptive systems literature, arguing that planning practice needs to embrace uncertainty, rather than eradicate it, in order to enable built environment adaptation. These findings are significant because they offer a framework for understanding how successful building adaptation can be enabled in England, moving beyond the negativity associated with the adaptation of buildings in recent years. This is achieved by recognizing the complex interactions involved in the adaptation process between respective stakeholders and offering an insight into how respective scales of planning governance can coexist successfully.

Keywords
adaptation; built environment; complexity; flux; temporality; urban planning

Issue
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1. Introduction

This aim of this article is to consider how the urban planning system can plan for the continual adaptation (the process by which a building changes to accommodate new user demands) of the existing built environment in the face of increasing and recurrent manifestations of building vacancy and obsolescence. It considers this through the lens of local authority planning in England. Original findings are based on interviews with

a national sample of local authority planners, combined with an institutional analysis of planning practice since the 1947 Town and Country Planning Act. Findings are situated within the conceptual perspective of complex adaptive systems (CAS). The article argues that the built environment, and the planning system within which it sits, should be considered, and managed, as part of a CAS rather than a static domain that needs to be simplified.

Obsolescence and vacancy have always been part of the building life cycle, as tenants leave properties and move to new ones—flux, a period of uncertainty before the establishment of new direction, can be considered part of building DNA. Buildings are produced in response to socio-economic circumstances to meet changes in demand. As that demand evolves through economic restructuring, technical innovation, and social change, existing buildings and uses become obsolete and new buildings and uses are required to replace them (Henneberry, 2017). This can be seen in a variety of contexts: through revisioning of existing housing schemes, changes from office to residential use, historic buildings as they seek viable futures, and even power stations being reimagined as art galleries.

What is new, however, is the rate and regularity of obsolescence and vacancy (Armstrong et al., 2021; Muldoon-Smith & Greenhalgh, 2017). Traditionally, a typical office lease would be 20–25 years long with full repairing and insurance obligations placed on the tenant. In recent years, a typical lease would be 2–3 years long and increasingly flexible as tenants demand the ability to expand or contract their business models without the restriction of a long-term property agreement. The retail built environment, in particular, was already under disruption from the internet, while the office built environment was already being pressured to reconfigure as a place to collaborate and create, alongside employees working remotely from home. Covid-19 has instantly accelerated this disruption, changing the way we utilize many of our buildings. Retail failure has sped up, with even more consumers moving online. Most employees have been working from home since March 2020, which has rendered the traditional office building in the central business district (CBD) obsolete, at least temporarily. Whole highstreets and shopping centers now lie vacant, and it is still uncertain if workers will return to CBD locations in the same way as before.

This has led to increased consideration of how the built environment can adapt to better reflect and accommodate the increasingly dynamic needs of society and the economy. In the article, flux is framed within the recent emphasis placed on temporality, transience, and permanence in the urban built environment (Henneberry, 2017); the politics of time (Raco et al., 2018); increased levels of vacant land and premises in the post-industrial city (Burkholder, 2012); a consequent engagement with DIY, guerrilla, and tactical urbanism (Deslandes, 2013); and temporary and informal uses (Bishop & Williams, 2012; Colomb, 2012; Oswalt et al., 2013) alongside the pragmatic steps involved in transferring a temporary activity into a mainstream process (Andres, 2013).

However, it is important to note that this new engagement with arguably necessary change is not unanimously received. Built environment professionals and planners tend to be trained to view the city as an object that is planned, designed, and built according to definitive visions, and therefore struggle with turbulent and dynamic change. For example, the political institutions and governance regimes of the built environment, often enacted through the urban planning profession via building regulations, use classifications, zones, and land use plans, often reinforce static conceptualizations of the built environment.

Those associated with the traditional, stable view of work and life have defended established business models vehemently—with those working from home, or exploring new ways of working, assumed to be returning to the CBD after Covid-19 (Mahy, 2021), even scaremongering that it will lead to jobs being outsourced (O'Connor, 2020). Influential Goldman Sachs CEO, David Soloman, has labelled working from home an "aberration" ("Goldman Sachs," 2020, para. 1), while WeWork CEO, Sandeep Mathrani, declared "those who are least engaged at work are very comfortable working from home" (Frishberg, 2021, para. 5). Perhaps this situation is understandable when we consider that how we chose to live and work is not only a personal choice. The choices that we make and how much we are willing to pay via rent and purchase prices add up to market shaping message that is broadcast across development appraisals and construction choices. Landlords and associated businesses obviously have a vested interest in lobbying for a return to the 9 to 5 business model, as it underpins the rents of most traditional properties in CBD locations.

Nevertheless, internationally, society is asking questions that speak of a growing public awareness that we have become profoundly disconnected from buildings, pigeonholed into one building use or the next. These re-evaluations then mask interrelated questions of how we should plan, construct, and use our land and buildings in response to this new volatility. Often these questions fall into reductionist binaries relating to more or less planning, better or worse quality buildings, stability and transience, and object and agent. However, rarely is emphasis placed upon the actual process of built environment adaptation, particularly how it can be achieved successfully. To respond to this situation, an underlying argument in this article is that instead of polarized dualism, flux, and in the case of this article, built environment adaptation, is a complex adaptive system.

This situation is considered through the lens of urban planning in England, as it struggles to react quickly to: (a) dynamic changes in the use and demand of the built environment, and (b) the necessarily slower need to plan for the complex implications of volatility amidst a political context of deregulation. Indeed, much of the

current adaptation discussion in England is wrapped up in narratives of simplicity and the removal of regulation and wider neo-liberal arguments of deregulation (Tewdwr-Jones, 2012). This can be seen in the contemporary political planning narrative in England where perceived radical planning reform will "build better and build greener but we will also build faster" in order to create a planning system suitable for the 21st century (Johnson, 2020). We argue the opposite: In order for the existing built environment to adapt, there needs to be an element of structure and local planning engagement to frame and enable successful adaptation.

To inform this situation, the authors argue that more focus should be placed on the planning system itself, the system of regulations and institutions that govern adaptation in the built environment—in particular, how the planning system can govern a built environment in a permanent state of dynamic flux. The authors center the research in the CAS literature (Skrimizea et al., 2018). In this article, a CAS compromises a number of agents (in this research this could comprise tenants, planners, developers, financiers, city managers) who all have their own objectives and decision-making frameworks which evolve over time. All of these agents interact with each other over time, to form a whole that is more than the sum of the individual agent objectives. The contention is therefore that it is not only planning scholars who should focus on complexity, rather planning practitioners at various scales in government, landlords, investors, and tenants—all of whom have a stake in adapting the built environment should all adopt a complexity perspective.

The complexity perspective considers the world to be dynamic, changing, and inherently uncertain, and is underpinned by the assertion that you cannot understand such a system by looking at its individual parts or prioritize one agent or factor. This position: (a) is suggestive of the current turbulence taking place in the built environment, and (b) indicates that simplifying the way we regulate the built environment and considering it through a static perspective (de Roo, 2000, 2003) will lead to missed opportunity, seen through recent poor examples of office to residential conversion activity which has arguably favored the developer without considering quality nor how local place needs to be reconstituted to accommodate adaptation (Clifford et al., 2018). In this sense, complexity in the use of the built environment does not remove the need for planning, rather it demands a more nuanced planning system that acknowledges and seeks to enable the current fluidity in land and built environment interactions, in contrast to traditional conceptions of the planning system (and supporting theories) that have been founded in static and simplified perspectives of the land and built environments (de Roo, 2010; Skrimizea et al., 2018).

Static ideas of complexity are illustrated by planning use categories (in the English planning tradition) and land use zones (in the European and North American planning tradition). Relatively speaking, these regulatory tools stood the test of time while land and building use remained relatively static and slow changing within the traditional differentiation of residential, office, retail, leisure, and industrial use. More recently, planning scholars (Boonstra & Boelens, 2011; Byrne, 1998; de Roo & Rauws, 2012; Innes & Booher, 2010; Portugali, 2011, 2012; Sengupta, 2011; Sengupta et al., 2016; Skrimizea et al., 2018) are contesting the static consideration of the planning environment and forwarding a perspective of society that is founded within ideas of complex systems, the unpredictable structures that emerge from such systems, and how systems (in this article building users) interact with their built environments. Suzuki (2007, p. 29) argues that at some point "a chaotic system of individuals undergoes a transition to order. And with this order, the complex system becomes highly adaptive, with a heightened capacity to respond to a constantly changing and unpredictable world." CAS recognizes uncertainty and complexity as a natural part of the land and built environment. It is this perspective of society and the broader environment that the authors seek to evoke in their conceptualizations of the land and built environment and also the complex planning system needed to make sense of it (Baggio, 2008; Hall & Clark, 2010; Liu et al., 2007; McGreevy & Wilson, 2017). In other words, the urban environment (and those that use it) is an interdependent, mutually interacting CAS (Waldrop, 1992).

The next section of this article considers the current planning context in England as a backdrop for the analysis in the article. It charts the history of discretionary planning in England, as it relates to building adaptation, and the more recent reduction in planning regulation within a perceived "freeing-up" of development potential. At this point, connections are made between the English experience of building adaptation and international approaches alongside wider debates of complexity. The remainder of the article analyzes the findings from local authority planners, their perception of building adaptation, and how a complexity approach could assist this demand. In the conclusion, the underlying research question is reflected upon alongside an appraisal of limitations, in view of the positions adopted in this article and opportunities for further research.

2. Changing Planning Context in England

The planning system in England can largely trace its modern history back to the 1947 Town and Country Planning Act, although its genealogy stretches back to the 1700s (Booth, 2003). The central tenants of the act were to divide the current quiet enjoyment of land from its future use, which was nationalized. Henceforth, anyone carrying out new development (as opposed to the existing land or building use) would need discretionary case-by case planning consent before developing any new work. Evoking the more recent engagement with complexity in planning theory, this system of planning

consent and development control is based upon the central principles of elasticity and flexibility, particularly the recognition that individual planning applications have their own individual complexity but that this complexity sits within a wider spatial whole. These principles have traditionally set the English tradition of planning consent apart from its zone-based European and North American counterparts (Booth, 2003, 2009). Rule based regulatory zoning systems establish hard and fast rules in relation to what can and cannot happen on land and within buildings, seen in many other international contexts across Europe, Asia, the United States, and Canada (for a comprehensive discussion of discretionary planning in England vs. zone-based systems in other parts of the world cf. Schulze-Bang & Webb, 2020).

However, in recent years, there has been a gradual erosion of discretionary planning in England. A pro-developer model has begun to gain ascendency (Tewdwr-Jones, 2012), based in the principles of reduced planning obstacles and presumptions in favor of new development. This has led to a tension between the perspectives of discretionary planning (seen by its detractors as sluggish) and neo-liberal developer friendly planning (seen by its detractors as simplistic). This tension is well captured by Jowell (1975, p. 30), who argues that:

> What is gained in uniformity may be lost in flexibility; rules to prevent the arbitrary may encourage the legalistic; case-by-case adjudication may prevent comprehensive planning; rules that may shield the bureaucrat from pressures and allow the efficient and speedy dispatch of cases, may offend the client who desires individually tailored justice.

The pro-developer planning perspective argues that the discretionary model of planning is too complex and increases risk and uncertainty in development. This then pushes up the cost of development related capital finance and reduces innovative new uses of land and buildings. Adherents of this perspective argue for a simpler planning system, that allows market competition, greater diversity of developers and, in turn, more adaptable places. Arguments in this arena contend that the flexibility inherent in the locally focused 1947 Town and Country Planning Act has been constrained by increased legislation as local plans have been strengthened (MacGregor & Ross, 1995) alongside the reequipment for detailed action plans, supplementary planning documents, housing and economic land availability assessments, and brownfield registers (Gallent et al., 2019; Schulze-Bang & Webb, 2020).

The advent of the coalition government in 2010 and successive conservative governments in 2015, 2017, and 2019 has seen the 1300 pages of planning guidance in existence pre-2010 reduced to 65 pages with the advent of the National Planning Framework in 2012. This was followed in 2013 with the temporary amendment of the General Permitted Development Order, which allowed the conversion of some building use without the need for formal planning permission; the most widely used was for office to residential change of use. This permission was made permanent in 2016 and followed in 2020 by subsequent legislation to give prior approval for the demolition of redundant commercial buildings and replacement with residential use. This was then immediately proceeded by the new commercial, business, and service use class—Class E—which came into effect in September 2020. Landlords (and business owners) now have greater flexibility to respond to changes in the trading environment and adapt without requiring planning permission. Perhaps the biggest change is that proposed in the 2020 Planning for the Future White Paper, which signals the change from a discretionary planning system, based in individual planning permission within an area-based plan system, to a rule-based system of zones. At the time of writing, this new planning rationale, defined by central government, instructs councils to simplify planning and parcel land into one of three categories (1: Growth, 2: Renewal, 3: Protection) with the "growth" and "renewal" zones suggesting outline planning permission and implicit permission to develop without formal planning procedures. However, following the appointment of a new Housing Secretary (Michael Gove) there is currently a pause in relation to the most significant planning reforms and a delay in the Planning Bill which would legislate for the proposals in the Planning for the Future White Paper. Table 1 provides a simple summary of the planning changes over the last decades as they relate to building adaptation.

The need to resolve these kinds of tensions is why the focus on change and impermanence in the government's Planning for the Future consultation—and the parallel change to Use Category E—is, in principle, to be welcomed. Previous research by Muldoon-Smith and Greenhalgh (2016) set out the need for adaptation in the built environment and the limitations of the governments Permitted Development Rights scheme for office to residential conversion. These initial findings have been more than vindicated by subsequent research from Remoy and Street (2018), Holman et al. (2017), Clifford et al. (2018), and Ferm et al. (2020) into the quality of subsequent homes. This led the government to introduce a further requirement, announced in 2020, for all new permitted development schemes to provide adequate natural light and comply with minimum space standards set at a national level.

However, in the drive for planning simplicity, we argue that England has potentially created a planning system that is insensitive to some of the most monumental changes taking place in the built environment. In ignoring this situation, we suffer the on-going illusion that market forces will drive adaptation in the built environment, if only the public sector would step away. In response, we argue for a counterweight to this arguably roll back and roll out neo-liberal (Peck & Tickell, 2002) planning rationale which recognizes the complexity of adapting

Table 1. Summary of planning change relevant to building adaptation since 2010.

2012	The new National Planning Policy Framework reduced 1300 pages of planning guidance to 65 pages.
2013	Temporary amendment of the General Permitted Development Order which permitted the conversion of underused office buildings into residential change of use.
2016	Amendment of the General Permitted Development Order was made permanent.
August 2020	Prior approval for the demolition of redundant commercial buildings and redevelopment as residential use.
August 2020	Planning for the Future White Paper was published.
September 2020	New commercial, business, and service use class—Class E—came into effect.

the built environment. The question we therefore pose is not whether to adapt, or not to adapt, but how best to plan for the adaptation of a complex land and built environment.

Zellner and Campbell (2015) and Sengupta et al. (2016) argue that it has taken some time for the discipline of planning to consider some issues as "complex." Subsequently, the actual mechanisms that will prove adequate to tackle complex planning issues constitute a very relevant issue still under debate (Skrimizea et al., 2018, p. 123). Skrimizea et al. (2018) go on to argue that complexity has been considered in the slightly wider domain of natural resource management (Arnold, 2010; Kato & Ahern, 2008; van Buuren et al., 2013), where adaptive management (Arnold, 2010; Patterson et al., 2008; Terryn & Boelens, 2013; Westley, 2002), adaptive policy making (Haasnoot et al., 2013), and adaptive governance (Dietz et al., 2003) have gained some traction.

The intention is to extend these considerations into the adaptation of the physical built environment and its urban planning. The CAS approach opens up the possibility of removing binary positions of simplified and inefficient planning, recognizing that if the built environment—and planning—is going to adapt to more dynamic socio-economic conditions it needs a more complex, rather than simplified planning and development perspective. It is hoped that the CAS perspective is not only useful to planners who wish to accommodate adaptation in place but also landlords and investors who are struggling to make sense of the hybrid world of working at home and in the place of work. While it is conceded that this position may not be attractive to those building owners who want to force workers back into the office, it is hoped that the CAS position will help smooth some of the frictions and antagonisms between scales of government, those charged with writing planning White Papers, local authority planners, developers, investors, and tenants, recognizing that all of these agents interact and influence the wider development system as a whole.

3. Methodology

The remainder of the article examines this gap in knowledge, namely, how can the planning profession better support the need for the built environment to adapt under conditions of complexity. Central government in England has clearly given considerable thought to adaptation in the Planning for the Future White Paper. Academics and professional groups have responded meaningfully to the proposals in the White Paper (see the recent contributions from the Town and Country Planning Association, 2020). However, it is unclear to what extent local authority planning practitioners, often seen as the cause of local inertia, have been consulted in this process. The findings attempt to fill this omission and seek to suggest how the English planning system can better support complex adaptation.

The article addresses this situation with the following research question: How can the planning system in England better support complex adaptation in the built environment? The article reflects on this question by reporting findings from an 18-month research project into the practice of planning adaptation in the built environment in England. In this research, focus is entirely on public sector planning professionals. The novelty in this research is found within giving these professionals a voice in the planning system which is increasingly defined by top-down decree from civil servants and politicians. The authors consider that these local planning professionals have meaningful insights into the practice of complex adaptation in the built environment, because they experience it on a daily basis in their local built and land environments. We recognize that by not surveying private sector planners we present a partial picture of the planning profession in England. We do not talk to private sector planners, developers, landlords, investors, or tenants and building users. In addition, we do not employ geographical analysis of the various responses. Yet, on balance, we argue that this perspective provides an original counter narrative to more regular written interventions from central government, politicians, and private developers. The missing agents within the CAS of adaptation and the potential for geographical enquiry are highlighted as an opportunity for additional study in the conclusion.

The empirical material in this article is based on a two-stage research process, where all local planning authorities in England were approached (333 local

authorities in total) in relation to their viewpoints on the research topic. Where the same professionals were interviewed at both stages in the process, an improvised Delphi technique was used to gain consensus in viewpoint (Linstone & Turoff, 1975). A conscious decision was taken to organically weave the participant content into the text to, where possible, create a narrative account of planning adaptation to counter the relative silence given to local planners in this debate (Etherington, 2007; Hertz, 1997). The intent behind this approach is to bring to the surface the varying types of institutional language and attitudes that texture the complexity of this process. Therefore, throughout the article, those taking part in the research are considered and referred to as research participants, rather than respondents, and all effort is made to give voice to their opinions.

The authors approached local authorities directly, rather than via Freedom of Information Request to avoid the risk of legalistic and sanitized responses. Although a relatively modest response number (specifically 31 local authorities, just under 10% of the sample), this methodological approach generated a unique sample of responses from experienced practitioners across a comprehensive geography. The planners all worked within planning policy or development control in local planning authorities with responsibility for planning applications. Most of the interviews were conducted via telephone, and latterly software-based communication platforms as Covid-19 set in. All findings were recorded, transcribed, and then coded using an analysis matrix. The analysis matrix was used to make sense of thematic coding founded within an overall grounded theory (Glaser & Strauss, 1967) and constant comparative (Goertz & Le Compte, 1981) form of analysis and theory development. Upon request, practitioner identities and local authority locations have been redacted in order to protect their identity (only general location information is revealed). This approach stimulated frank discussion in relation to the planning of adaptation, which might not have been possible otherwise. This empirical material is complemented by a secondary analysis of the institutions of planning governance in England, analyzing policy evolution since the 1947 Town and Country Planning Act.

The significance of this research is that it provides policy makers with a perspective to evaluate ideas in relation to planning building adaptation. For those planners involved in the day-to-day management of building transformation, the article provides an approach to understanding the wider significance of building adaptation which the researchers hope will contribute to a more knowledgeable and effective planning practice in relation to building change. Expanding knowledge in this area will help planning practitioners in mature urban areas deal with the challenges of adapting an ageing urban landscape. However, it is also hoped that this approach will help those planning practitioners dealing with the demands of accelerating urbanization in the non-western world.

4. How Can the Planning System in England Better Support Complex Adaptation in the Built Environment?

Changes to the English planning system since 2010, culminating in the Planning for the Future White Paper, appear to delocalize planning, favoring a blanket approach based on simplicity and state led permission in principle. However, our findings suggest that adaptation would be better supported by a different trajectory, one more associated with the original discretionary intentions of the 1947 Town and Country Planning Act combined with a perspective founded upon CAS. These findings can be encapsulated in three main areas:

(1) The need for a more locally sophisticated, nuanced planning system that is responsive to complexity (explored in Section 3.1);

(2) The demand for a slower, measured planning system that facilitates a complex built environment that is in a constant state of flux (explored in Section 3.2);

(3) The need for granular, place specific spatial planning that co-exists with central decree, rather than simplified zones within a centrally defined, permissive, and permitted planning system (explored in Section 3.3).

The participants in the research all recognized in varying degrees the need for the built environment to adapt and the gradual dissolution of fixed building use categories. However, in order to facilitate this impermanence in the built environment, the participants also noted the challenges inherent in making this a reality. They collectively argued that in order for adaptation to take place relatively quickly—one of the central tenants of the Planning for Future White Paper—there needed to be a parallel planning process that recognized the complex actor interrelationships at various scales and the place-based factors that need to be prepared to support recurrent building adaptation.

4.1. The Case for Complexity in the Planning System

It is important to note that planners surveyed in the study were not focused on preserving the traditional planning system in England. Like existing buildings, they recognize the need for the planning system to evolve in response to a more dynamic environment. The built environment, and the way we use it, has clearly reached a threshold. The old urban world of clear building use (and associated codes) is simply no more. In principle, the majority of participants were in favor of enhanced permitted development rights, the new Use Class E, and also supported the potential use of zoning. However, their greatest concern was in the lack of recognition for the complex deliverability of these principles. For example, a planner in Central London argued that:

> Deregulation has become synonymous with no regulation, which shouldn't necessarily be the case. There needs to be a balance struck through relaxation of certain elements of planning regulations within a continuing local plan-led system that recognizes local complexity. Country-wide deregulation gives no recognition to local context differences.

In the East Midlands, another planner stated that:

> I feel that current policy is a blunt instrument. It does not take into account the complexity of town centers types, characteristics, and sizes. The policies fly in the face of localism and devolution.

There was a sense from participants that the real need to change the built environment was being confused with a concurrent demand for less planning. Participants instead favored a balanced approach that enhances the ability to adapt the built environment, supported by local consultation, and importantly the infrastructure to support the inevitable complexity of mixed use. Participants overwhelmingly argued that the need to adapt the built environment should not be elided and overtaken by other competing planning policy demands, such as the need to speedily increase new house building. There is clearly a demand to plan multi-functional spaces where people live, work, and conduct leisure alongside supportive amenities. This demands careful planning to account for complexity, not only simplicity and quick development. A planner in North London characterizes this situation, arguing that:

> Local authority planners look at economic implications, viability, and the standards of schemes. Permitted development rights makes it easier for developers to circumvent these considerations. Poor adaptation can negatively change the dynamics of a place if local authorities cannot plan for local complexity.

Reflecting the recent arguments of Zellner and Campbell (2015), who called for planners to further develop their quantitative and computational skills in addition to negotiation and communication, several planners called for enhanced use of technology to help make the planning system more efficient but retain the focus on local complexity, arguing that the traditional planning system needs to:

> Move away from exhaustive and expansive written studies and evidence costing tens of thousands of pounds at a time and years to implement, towards a more reactive data-based system that responds to real-time demands in urban areas, adapting its policies to allow for provision where it is needed and to address trends and shortfalls evident in emerging recent and relevant data. (A planner in South East England)

This echoes Zellner and Campbell (2015, p. 472), who see CAS and associated complexity sciences as an "extension and technologically-assisted enhancement of communicative action" rather than an aid to simplification of planning.

4.2. Complex Planning

While supportive of the principles behind recent policies that aid adaptation, findings in this study suggest that the discipline of planning is struggling with the reality of implementing the complexity associated with adaptation. Clearly, there is a demand for planning to act faster—due to the speed of change in the built environment. This is reflected in relaxations to permitted development rules and building use categories. However, there is also a concurrent need for planning to operate more circumspectly in order to plan the nuanced complexity of a built environment no longer striated by singular use categories. Reflecting the temporal dialectic suggested earlier, between an accelerating rate of change in the built environment and a concomitant need to plan in a measured way to accommodate this process, participants argued that:

> There is a misconception that discretionary planning leads to piecemeal slow development; the discretionary system exists with a local plan environment which prevents this. Rather, it is the centrally imposed de-regulation that causes poor development that then needs to be retrospectively unpicked. (A planner from the West Midlands)

Much of the Planning for the Future consultation is encased in the rhetoric of development, housing growth, and acceleration. This manifestation can be linked into the policy mobilities literature which examines the techniques, narratives, and temporalties that accelerate and decelerate policy adoption (Grimwood et al., 2021; McCann, 2011; McCann & Ward, 2013; Peck & Theodore, 2010, 2015; Temenos & McCann, 2013; Wood, 2015). For example, Peck and Theodore (2015) highlight the foreshortening of the policy development process and its acceleration under roll back and roll out neo-liberal notions of reform. In a certain sense, this acceleration is synonymous with the dynamic volatility—the state of flux, inherent in the current built environment.

However, Wood (2015) and Grimwood et al. (2021) supplement this perspective by distinguishing between policy adoption and implementation, the former fast but the latter gradual, "creeping, at times sluggish and sticky, and at other times loitering instead of prompt and hurried" (Wood, 2015, p. 569). While this distinction is still concerned with how polices take route in practice, rather than how policy should be implemented, in a similar way to the findings of the slow city movement (Lynch, 1973; Raco et al., 2018; Slow Movement, 2017), it helpfully distinguishes the complexity involved in adopting a faster

planning system that accommodates adaptation but one that also needs to be implemented slowly to achieve this aim. In this sense, flux, transience, impermanence, and adaptation can be perceived as both risk and opportunity (Sengupta et al., 2016). As such, we argue that the aim of urban planning, as it relates to the adaptation of the built environment, should not be to reduce uncertainty, nor to control complexity, but to "understand and harness" these factors and develop a planning system that "co-adapts" and "co-evolves" (Skrimizea et al., 2018, p. 131) alongside dynamic changes in the use of the built and urban environment (Allen, 2012; de Roo, 2007; Terryn & Boelens, 2013).

Suggesting one avenue for this, a planner in the Southeast argued for a " 'fast track' local planning system for developers that supports high quality, complex adaptation, rather than one that supports poor quality developments through the back door." This is in contrast to the recent poor examples of building adaptation, particularly office to residential conversions, which are arguably due to simplified planning policy and poor economic conditions; for example, where poor schemes have scrapped through on the margins of viability because of the removal of affordable housing requirements, infrastructure contributions, and relaxed building standards.

4.3. Local Spatiality and Cooperation

In these uncertain times, it can be argued that the best strategy for tackling Covid-19 seems to be local, targeted intervention as spikes develop and mutate in different complex ways (World Health Organization, 2020). Findings suggest that it is similar for built environment adaptation, which is also uncertain and dynamic. A planner from North London states that "Local authorities currently have to react to what Westminster says. The more you localize the ability to respond to the changes, the easier it becomes to manage adaptation."

In their support for adaptation, participants called for more deregulation. However, importantly, they indicated that deregulation should take place at the national level, with more emphasis given to the local scale of planning. A planner from Central London argued that:

> Local planning authorities have a more detailed understanding of the issues facing their areas and are better placed to respond to adaptation. A one-size-fits-all approach doesn't work. [Unfortunately, at the moment], we are being deregulated at the local scale but regulated more at the national scale; this ties our hands.

Participants were very clear that much of the recent planning changes, particularly by subverting the National Development Order, contradicted other policy priorities around localism and devolution. However, participants confirmed that they did not refute national planning involvement if it was strategically supportive to local complexity. This indicates that local scales of planning should deal with granular context specific complexity, while national government should "set stringent quality measures [e.g., energy efficiency and domestic room sizes] to ensure that the country, as a whole, benefits from high quality development" (a planner from the East Midlands).

In making this argument, it is not our intention to over fetishize the local in favor of the national scale of government. Most—if not all—planning systems operate within varying contexts of tension between national and local scales of planning, and often additional regional and sub-national scales in between. Rather, our intention is to highlight the need for both to be recognized as a wider CAS that must come together to enable adaptation, rather than a set of individual agents with competing objectives (see Section 2 for a discussion of these tensions, as they relate to the changing nature of planning in England since 2010). The Covid-19 response displays a positive example of how national government in England has collaborated with the private sector to develop vaccines while recognizing that plans should be flexible enough to react to changing epidemiological conditions in different parts of the country, the local context, and the capacity to respond (World Health Organization, 2020).

Indeed, participants were also clear that the planning system is only one part of the complex process of adaptation in the built environment. Illustrating this, a planner from the West Midlands argued that adaptation is "also linked to regeneration, access to funding, and the market for the re-use."

Evoking this observation, Adams and Tiesdell (2010, p. 198) have argued that planners do not necessarily see themselves as market actors even though they traditionally play an important role in "shaping, regulating and stimulating market activity." In the arguably anti-planning rhetoric over the last 12 years, cooperation almost seems discredited in favor of planners protecting the bastions of quality and local areas from developers out for a quick buck. However, the authors argue that sustaining a dualism between planning regulation and market-based development is only a useful political tool for those interested in reducing the role of local planning authorities, as it allows the latter (those who want as few planning regulations as possible at the local scale) to define themselves against the former (the perceived inefficient local barriers to adaptation). Instead, research participants insist that instead of heated debate there is need for polite agreement between these opposing viewpoints. It is when planners work with developers, investors, and designers to find locally specific solutions to building obsolescence that they arguably have most impact. The CAS perspective is potentially a key enabler in this process as it fundamentally recognizes that each agent involved in the adaptation process comes together to form a greater whole, even though they have different objectives and perspectives. Currently, in

England, politicians are portrayed as the progressive change champions while local planners and governments are being portrayed as obstructors of innovation. It is anticipated that by utilizing a more holistic perspective—although one that still recognizes differences of opinion—adaptation can be more successful and the government can create policy recognizing that complexity can help enable adaptation, rather than prohibit it. It is also hoped that the CAS perspective gives local authority planners (and related academics) a framework to shape the adaptation debate, rather than criticizing it.

5. Conclusion

In response to the underlying research question in this article (How can the planning system in England better support complex adaptation in the built environment?), we argue that those involved in building adaptation—be they planners, developers, landlords, or tenants—should revisit the spirit of the 1947 Town and Country Planning Act. This is because it evokes the principles of CAS, particularly the recognition that individual planning applications, as they relate to building adaptation, are part of a wider spatial whole in terms of infrastructure requirement, quality considerations, and precedent that has been set historically. We argue that a CAS approach helps to balance the challenge of creating a planning system that is nimble enough to facilitate timely adaptation but rigorous enough to accommodate and support dynamic change in the built and spatial environment.

This contrasts with the Planning for the Future White Paper which pejoratively argues for the overturning of the discretionary-based tradition in English planning in favor of a rules-based system to obviate perceived inefficiency. We argue that enduring change comes through improving processes and shaping institutions, not temporarily overriding them through force of political will and policy acceleration.

Our findings suggest that we are potentially simplifying our approach to adaptation in the built environment just when we should be engaging with complexity in the built environment. The authors argue that there is a need to plan for an accelerated time of experimentation, as society decides how it is going to function in its built environment going forward which no longer has hard and fast rules.

Within this argument it is important to note that the authors are not against change in the planning system. We agree that inefficiency should be removed from the planning system. However, this imperative should not be conflated with the removal of complexity. Rather, we argue that a useful focus for planning the built environment is complexity itself, rather than simplification. Arguably, only by recognizing the complexity and interconnection between different scales of government, and the competing but overlapping interests of actors within the adaptation process, will the very reputation of adaptation be rejuvenated.

In considering how to contend with adaptation in the built environment it is worth noting some limitations in this article. To tackle the research question, the authors have taken a necessarily broad view of planning history in England since 1947 and the study of complexity (for a more detailed account of the evolution of planning in England since this time see Booth, 2003, 2009; for a more detailed account of planning change since 2010 see Grimwood, 2021). In addition, we have chosen to focus our enquiry on planning in England. This is a partial representation of adaptation in the international context, and we concede that there is considerable potential for comparative studies in other international locations and planning contexts. Nevertheless, we consider the current planning changes in England to form a key laboratory for the rest of the world. This is because planning in England is going through such significant structural change, with the very fabric of its legislation (and the ideas that underpin it) changing radically since 2010. Some of this change is specific to England, part of a long held conservative demand for liberty and smaller government. However, the situation is also influenced by wider international ideological currents of neo-liberalism and structural socio-economic factors associated with changing building use habits.

In addition, we have only had room to make a cursory appraisal of complexity, as it applies to planning the built environment (for a more thorough account of complexity in planning see Sengupta et al., 2016, and Skrimizea et al., 2018, both of which were useful conceptual conduits for this article). We argue there is considerable scope for further research into how the CAS perspective can aid the development of planning practice, as it relates to the adaptation of the built environment. We also recognize that by focusing only on local authority planners we provide an incomplete picture of the stakeholders involved in the adaptation process while we also do not delve into geographical differences between the relative participants and locations surveyed. Both of these areas are certainly an opportunity for additional study.

Instead, the article aims to set out an initial conceptual position that can be used to think about how to plan for adaptation in the complex built environment while at the same time giving planners on the ground a voice in this debate. There is no magic wand for adaptation and the devil is in the detail. As Jacobs (1958) remarked, “designing a dream city is easy. Rebuilding a living one takes imagination.” To this end, and despite these limitations, we consider the perspective and findings in this article a useful lens through which to understand the situation at hand. In this sense, the article should be seen as an early staging post for research into the complex planning of adaptation in the built environment—an argument that can be seen in parallel to what seems an unabated push toward conversion of buildings into new use, most recently seen in the recent announcement from the City of London Corporation that they intend to convert redundant offices into 1,500 new

homes by 2030 (“City of London to convert offices into homes,’’ 2020).

Conflict of Interests

The authors declare no conflict of interests.

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Article

Fits-and-Starts: The Changing Nature of the Material City

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Abstract
How and why does the material city in the late 20th and early 21st century change? This article examines one type of prominent urban change, which is "fits-and-starts" and represents change that is concentrated in space and time and that nonetheless has longer term repercussions with high economic and environmental costs. Through a review of the literature and an illuminating case study in Las Vegas, this article reveals how human perception and decision-making via two interrelated phenomena, future speculation and manufactured obsolescence, drive such change. The case study in Las Vegas is particularly fascinating because as a city of apparent extremes, it not only reveals in clear relief phenomena that are present in the capitalist city but it also offers insights into basic patterns of decision-making that actually shape—or design—the contemporary city. The article concludes with more general insights into the nature of this type of urban change and implications for alternative types of urban practices.

Keywords
fits-and-starts; Las Vegas; material city; urban change; urban practice

Issue
This article is part of the issue "City as Flux: Interrogating the Changing Nature of Urban Change" edited by Aseem Inam (Cardiff University).

1. Introduction

Historically, cities were thought to have changed gradually, much like the metaphor of a slowly flowing river that changes course over centuries and millennia. In contrast, this research makes the claim that prominent parts of the contemporary city often change in fits-and-starts, which are sporadic bursts of activity that are concentrated in time and space but that nonetheless have long-lasting consequences. In the cities of late 20th and early 21st century within capitalist economies, sudden and large-scale changes to the urban fabric occur often due to speculation about increased future profits as structurally sound buildings are replaced by newer and larger ones. The famed Las Vegas Strip is renowned for the regular implosions of buildings that are only a few decades old. The Las Vegas Strip, or simply "the Strip," is the popular name for the South Las Vegas Boulevard, where most of the major casino-hotel-resorts are concentrated. This research examines the demolitions and construction on the Las Vegas Strip to understand the perceptions and calculations of future profit and to tease out the thinking behind fits-and-starts type of urban change. The location of the case study in Las Vegas (i.e., the Las Vegas metropolitan region) is particularly insightful because this city of extremes brings into sharp relief those phenomena that characterize the urbanism of the contemporary city.

I approach urbanism via the lens of materiality, which is the quality or state of being that consists of matter and which relates to the physical world (Beauregard, 1990). In cities, there are many different terms for this, such as urban form, urban landscape, urban fabric, and built environment. I prefer the term material city to refer to the world of things that embody the four-dimensional city, which are the three dimensions of physical form plus the fourth dimension of time that form inhabits and changes within. At a most basic level, the materiality of the city is that which we human being perceive; that is, the actuality that we see, touch, feel, and hear with immediacy. In fact, while the city can be thus perceived as a world of things that we perceive and interact with

(e.g., land parcels, buildings, open space, and infrastructure that are the most commonly identified spatial and formal elements of urbanism), the city as a whole (i.e., which is what I call a metropolitan region in this context) can also be considered to be an immense actor of its own that we humans have brought into being (Fletcher, 2012). My focus here is on how the most primary forms and spaces that tend to define both the basic material as well as the primary commodities of capitalist urbanism—i.e., buildings and the parcels of land they occupy—operate over time in recent history. The material city has multiple aspects and meanings (Lieto, 2017), but even at its most basic level, it matters a great deal because it is the spatial, tangible, and textured setting of our daily lives and its meanings can have great impacts.

The selection of the case study in Las Vegas is based on Flyvbjerg's (2006) compelling argument about the "force of the example," in which a case study illuminates concrete reality through thick descriptions and rich narratives. Las Vegas is an excellent site for such qualitative and fine-grained analysis of contemporary urbanism (e.g., Inam, 2016) because of the way its apparent extremes reveal—with great clarity—what occurs in other cities (e.g., historical relationalities as turning points in urbanism, public-private partnerships that are structurally imbalanced, frontstage/backstage metaphors that reveal spatial inequalities). As a city of extremes, Las Vegas is also an excellent site to study how and why such patterns of fits-and-starts urban change occurs. For example, between 1993 and 2016, in a highly accelerated version of the change that many U.S. cities experience, Las Vegas demolished significant hotels, casinos, and resorts: the Dunes, Landmark, Sands, Hacienda, Aladdin, El Rancho, Desert Inn, Boardwalk, Stardust, New Frontier, Riviera, and Clarion. They were replaced by new icons of the Las Vegas Strip, such as the Bellagio, Venetian, Mandalay Bay, Planet Hollywood, Wynn, and CityCenter casino-hotel-resorts. Thus, by using the example in Las Vegas as an illuminating case study, the research in this article helps us understand that it is ultimately, human beings (e.g., investors, property owners, developers) who make decisions based on their perceptions of current versus future economic values. I now examine the various discussions of the changing material city in the literature.

2. City as Flux: Understanding Urban Change

Urban change is commonplace, as I describe in my book *Designing Urban Transformation* (Inam, 2014). Much of what follows draws from and builds upon that work and its related literature. There is a mode of thinking—especially in the design fields and among practitioners—that tends to value the city primarily as a fixed three-dimensional object. The conventional mindset in which cities are designed has been shaped by an architectural vision that seeks to articulate urban environments in minute detail (Hack, 2011, p. 446). The underlying idea is that a stable framework for urban life will offer a semblance of continuity in the face of the ever-changing occupants and activities of the material city. In order to operationalize this approach, urbanists have devised a variety of techniques, such as design guidelines, form-based development regulations, signage controls, pattern books, and design review processes managed by committees. While such an approach often produces visionary thinking and stunning visualizations, it nonetheless posits an objectified endpoint for a phenomenon (i.e., the city) that is in reality constantly changing, and thereby limits a multitude of possibilities in its further evolution.

Scholars of urbanism have made a similar argument regarding our understanding of cities, including the historian Spiro Kostof:

> The tendency all too often is to see [the material city] as a finite thing, a closed thing, a complicated object. I want to stress what we know instead to be the case—that a city, however perfect its initial shape, is never complete, never at rest. Thousands of witting and unwitting acts every day alter its lines in ways that are perceptible only over a certain stretch of time. City walls are pulled down and filled in; once rational grids are slowly obscured; a slashing diagonal is run through close-grained residential neighborhoods; railroad tracks usurp cemeteries and waterfronts; wars, fires, and freeway connectors annihilate city cores. (Kostof, 1999, p. 13)

Other scholars have forged ahead with their own investigations of such shifts. For example, in 1915, the biologist, sociologist, and pioneering town planner, Patrick Geddes, argued that "a city is more than a place in space, it is a drama in time" (Geddes, 1915, p. 107). The geographer James Vance focused on what he called "urban morphogenesis—the creation and subsequent transformation of city form" (Vance, 1990, p. 38). Although urban morphology is often taken simply to mean the physical form of the city, Vance addressed the questions of process, such as how a society creates and transforms the physical fabric of the city.

The geographer David Harvey is even more explicit about describing the city as flux when he discusses the process of the "destruction, invasion, and restructuring of places on an unprecedented scale," caused by "changing material practices of production, consumption, information flow, and communication coupled with the radical reorganization of space relations and of time horizons within capitalist development" (Harvey, 1990, p. 39). Technological innovations in production and advanced differentiation in consumption speed the pace at which commodities, including buildings, are produced, junked, and reproduced (Harvey, 1990). Moreover, for Harvey the city is more of a means than an end in and of itself, due to production driven by motives of capital accumulation: "The urban process implies the creation of a

material physical infrastructure for production, circulation, exchange and consumption" (Harvey, 1978, p. 113).

The question arises, then, of how exactly this notion of city as flux manifests in the material city. Kostof provides a vivid description of this physical manifestation:

> The spatial order cast by houses, monuments, and solid city walls is gradually subverted by generations of seemingly innocuous tinkering, as in the case of Rome, or its deliberately revamped through massive interventions, like those of Haussmann's Paris. In recent times, modern warfare's generous capacity to destroy has been seized as an opportunity to experiment with the latest trends in urban design: lacking a war, mass demolitions can be legislated to similar ends. (Kostof, 1999, p. 280)

Furthermore, "far less dramatic is the incremental transformation of city form through the thousands of daily adjustments to its fabric due to the owners and users of private property" (Kostof, 1999, p. 250).

At different scales of time, by the hour, the day, the month, the year, the decade and beyond, the material city is therefore always in a state of flux. Architect and theorist Rem Koolhaas called this state delirious (Koolhaas, 1978), while urban theorist Marshall Berman wrote that the experience of the urban is not only fleeting but a type of perpetual disintegration that is part of the maelstrom of modern life (Berman, 1982). Both Koolhaas and Berman's observations speak very much about the contemporary city in the late 20th and early 21st centuries. In this era more than any other, technological innovations in production, globalization, and advanced differentiation in consumption accelerate the pace at which commodities, including the buildings, spaces, and infrastructure of urbanism, are produced, eliminated, and reproduced. The implication is that cities are changing at a faster rate than in the past. At the same time, different parts of the city change at different rates, such as underlying topographies and geographies of land (e.g., hills, rivers, water table), plots of land ownership, and certain infrastructures such as roads and sewage systems that can sometimes last for well over a hundred years. Cities represent massive sunk costs not only in large-scale fixed capital, such as buildings and bridges, but also in the economic and political arrangements that have evolved to manage that capital. Buildings themselves are spatially entrenched commodities whose qualities (e.g., sunk costs, land use regulations, three-dimensional materiality) resist frequent mutation and thus are slower to change. At the other extreme, within buildings, office and retail interiors tend to change more frequently.

The materiality of a city does not inherently behave like either regular radio waves whose rhythms recur or like organic pieces of fruit whose eventual decay is inevitable. If we look more to empirical social science than to metaphors borrowed from the physical sciences, the rhythms of change appear less regular and more dependent on the decisions made by key actors within specific social, economic, and political processes and contexts. The conventional paradigm that forms the foundation of real estate economics and is the starting point for most neoclassical models of property markets is basically about supply and demand (Weber, 2015). Change is driven by the current and potential users of space who seek to maximize their utility; in other words, cycles are market-driven and demand-derived, such as from the household formation, job growth, and business growth. In these demand-side explanations, construction cycles are driven by the aggregation of individual occupants' profit-maximizing decisions to move or expand in competitive markets. However, if real estate is indeed simply derived demand, then spatial change should closely mimic trends in population, net household formation, and employment.

In contrast, supply-side perspectives tend to view buildings as vehicles through which property owners and others in the industry make money. Construction occurs when the assets produced are considered a good investment. The profitability of construction as an investment strategy will depend not just on what individual occupants want, but also on broader institutional dynamics such as the legalities of property ownership, the cost of capital, the regulatory landscape, and the political power structures of cities. Yet another perspective, critical theory, as brilliant as it is in providing insights into the many deeply structural pitfalls of capitalism, nonetheless tends to restrict the agency of developers by treating them as tools of capital and regarding real estate as a passive outlet for the surpluses generated in other sectors (e.g., Harvey, 1978, 1990, 1991). In this perspective, developers are driven by the innate needs of capital to switch between different circuits of accumulation and root out the highest profits.

The fits-and-starts type of urban change, which is the focus of this article, suggests more sudden transitions from one state of urbanism than what conventional real estate market thinking suggests. Based on many years of my own professional experience working with developers in different parts of the world and research conducted by my colleagues and I on the role of developers in the shaping the material city in the U.S. (e.g., Inam, 2012; Inam et al., 2004; Levine & Inam, 2004), we found that urban change can be quite idiosyncratic because it is ultimately derived from human decision-making based on perceptions, which are in turn and to various degrees informed by previous experience, peer actions, and larger political and economic trends. Rather than broad-brush theoretical generalizations derived singularly from mainstream market economics, real estate development literature, or critical theory perspectives, I thus take a more fine-grained empirical and contextually grounded approach. In this approach, while private investors and developers may be a part of a larger real estate industry that comprises other influential and interdependent

actors, the final decision whether or not to proceed with their multimillion-dollar speculative projects rests ultimately with them and their teams, and thereby depends on their estimations regarding perceived obsolescence and speculation about future profit. In other words, the ultimate decision whether or not to purchase a property, whether or not to demolish an existing structure, and whether or not to proceed with a new building rests quite often with real estate developers, property owners, and/or financial investors themselves.

Who are the most influential decision-makers that are quite often also the main actors driving change in the material city? At first glance, it may seem to be real estate developers, but behind the scenes, there are others with access to more resources, including private investors and property owners (Feagin, 1982). Developers get funds from sources such as profits from previous projects, personal funds, borrowed funds from investors, or loans from banks and other financial institutions. The financial capitalists that provide these funds include commercial banks, pension funds, insurance companies, and foreign investors (Feagin & Parker, 1990). In the U.S., land-use and development decisions are governed by a capitalistic political-economic system. The fact that small groups of wealthy and powerful actors can do far more than simply outbid their competitors is not analyzed in the mainstream real estate development and business literatures. Powerful actors such as wealthy speculators and industrial capitalists can and do shape the rules of the market system within which ostensibly free competition is taking place, including by influencing the public policy frameworks that have a direct bearing on their transactions. One type of real estate speculator is defined as an entrepreneur or corporate entity that purchases real estate with the hope of a profit from rising land and property values (Malpezzi & Wachter, 2005). These speculators are investors who buy and sell for a profit in a capitalist market system, often buying up land and sitting on it, often for years until the time is ripe to sell for a hefty profit. Speculation in this sense is intimately bound up with the question of the optimal timing of development.

The simultaneous destruction and construction in fits-and-starts type of urban change is akin to Schumpeter's (1942) idea of creative destruction, in which the tendency of capitalism is to render old products obsolete and to destroy them so that it can then continually invent new ones. Thus, annihilation and innovation tend to occur together in time and certain periods experience a disproportionate amount of both, such as when spectacular changes are made to the material city. Capital thus thereby circulates through the city in ways that are both dynamic and erratic in its ceaseless search for profit. Creative destruction is subject to other factors in addition to the drive to maximize private profit, especially how key actors in this process perceive existing circumstances (e.g., as a crisis or an opportunity, or both) and social status in pursuing marketable prestige (e.g., new and supposedly more upscale projects), with the key word being "perceive." The perceptions that investors, property owners, and real estate developers have are neither standardized nor unchanging. Instead, they rely heavily on the determinations made by communities of technical experts, such as appraisers and market analysts, but speculation, luck, political influence, and class resistance also conspire to translate this process of value creation and destruction. In addition, within each local context, a lattice of state and non-state institutions influence value in the built environment (Weber, 2002).

The notion of creative destruction brings to mind the point that much of the research and practice in urbanism and its related fields (e.g., architecture, landscape architecture, urban design, real estate development, city planning) tends to focus on further construction and growth, even if it is infill types of growth. On the other hand, a significant correlate of urban growth is the often overlooked and intimately related topic of destruction; that is, demolition. The lifespan of buildings continues to decrease while demolition is increasingly a highly profitable business. For example, in 2005, the U.S. the average life of a building was about 35 years and the business of demolition grossed more than $3 billion (Byles, 2005). There are many types of demolition techniques, and while the Las Vegas style of implosion is an efficient and economical method demanding technical precision, spectacular entertainment for onlookers, a feast for the media, and a boon to publicity-conscious real-estate developers, it accounts for only about 1% of all contemporary demolitions. Perhaps the most significant aspect of demolition is that while many would like to think of cities as more or less solid and enduring, demolition is a practice that makes powerfully evident their vulnerability and potential mortality. I now discuss how these dynamics operate in the specific context of a city in a two-part case study analysis. Part one examines the overall fits-and-starts type of urban change between 1993 and 2016 on the Strip, and part two examines more in-depth the decision-making behind radical changes on one of the sites on the Strip, which is the Desert Inn, subsequently replaced by the Wynn Las Vegas.

3. Case Study, Part 1: Fits-and-Starts on the Las Vegas Strip (1993–2016)

Since the 1990s, Las Vegas has become renowned for spectacularly imploding buildings (i.e., controlled explosions in which a building collapses on itself) that are only a few decades old (see Figure 1):

> The city is so attuned to change that perfectly sound buildings have been regularly torn down to make room for new structures….Not lingering in nostalgia, developers would destroy their previous creations for the next new thing, earning Las Vegas the title "Implosion Capital of the World." (Al, 2017, p. 2)

Figure 1. The spectacular night-time implosion of the famed Stardust casino-hotel-resort in 2007, complete with special lighting and fireworks. Source: Courtesy of Andrew Ferguson via Creative Commons.

At first glance, this phenomenon can be viewed as one that occurs "only in Las Vegas," as many observers have claimed about the city. However, such patterns of regular destruction and construction—while spectacular and occurring over compressed periods of time in Las Vegas–offer valuable insights into the nature of change in other contemporary cities as well, as I explain in the following sections.

A change in financing regimes from criminal mob to corporate mentality accelerated a particular aspect of capitalist development (Bernhard et al., 2008), which is the elimination of apparently old and tired products with newer and more profitable ones; that is, the building of larger casino-hotel-resort complexes. The scope of corporate wealth in the last several decades has meant that the city could offer a new level of extravagance and fantasy. Between 1993 and 2016, in a highly accelerated version of the fits-and-starts urban change that most American cities experience, Las Vegas demolished much of its recent history (Al, 2017; Rothman, 2003) with the implosion of 13 casinos, hotels, and resorts on the Strip: the Dunes, Landmark, Hacienda, Sands, Aladdin, El Rancho, Desert Inn, Boardwalk, Bourbon Street, New Frontier, Stardust, Clarion, and Riviera, and that were soon replaced by some of the new icons of the Strip, such as the Bellagio, Venetian, Mandalay Bay, Planet Hollywood, Wynn, and City Center (see Figures 2 and 3).

The owners of these privately owned casinos are powerful actors in the urban development process by any measure, especially financial ones. For example, in 1996 alone, banks lent an unprecedented amount of capital of $10 billion to help corporations such as ITT Corporation, Circus Circus, Mirage, and MGM Grand expand their casinos (Al, 2017, p. 181). In another example in 2004, multibillionaire Kirk Kerkorian merged his MGM Mirage company with the Mandalay Resort Group to form the world's largest gambling company, until a few weeks later when Harrah's Entertainment bought Caesars Entertainment in a $9.25 billion deal that created an even larger company (Stein, 2004, p. 24). Later the same year, Steve Wynn opened the $2.74 billion Wynn Las Vegas hotel, casino, and resort. The manner in which Wynn Las Vegas exemplifies the fits-and-starts type of urban change is described in greater detail in Part 2 of the case study further below in the article.

A major reason for this continued influx of financing is that gambling had become a well-known enterprise and was already legal in 48 of the 50 states in the U.S. by the early 2000s. Furthermore, respected business leaders such as Terry Lanni, Glenn Schaeffer, and Gary Loveman had brought Wall Street credibility to an industry that needed it, and thereby allowed it to attract and spend unprecedented amounts of capital (Bernhard et al., 2008). Thus, a vision of capitalist development

Old Hotel Name	Opening year	Number of Rooms	Original Owner(s)	Last Owner	Closing year	Demolition year	New Hotel Name	Number of Rooms
Dunes	1955	1200	Alfred Gottesman, Bob Rice and Joe Sullivan [allegedly a frontman for Ray Patriarca] - Dunes Hotels and Casinos Inc.	Mirage Resorts [Steve Wynn CEO] (1992)	1993	1993/1994	Bellagio	3005
Landmark	1969	498	Frank Caroll - Landmark Plaza Corp.	Las Vegas Convention and Visitors Authority (1993)	1990	1995	Plot was turned into a parking lot	
Hacienda	1956	1100	Warren Bayleyand Judy Bayley	Circus Circus Enterprises [Clyde Turner CEO] (1995)	1996	1996	Mandalay Bay	3211
Sands	1952	720	Jake Freedman and Jack Entratter	Interface Group [Sheldon Adelson CEO] (1988)	1996	1996	The Venetian	3036
Aladdin	1962	1100	Edwin S. Lowe	Sommer Family Trust [Jack Sommer CEO] (1994)	1997	1998	Aladdin (now called Planet Hollywood Casino and Resort)	2600
El Rancho	1948	1009	Marion Hicks and Clifford A. Jones	Turnberry Associates [Jeff Soffer CEO] (2000)	1992	2000	Drew Las Vegas (unfinished)	4000
Desert Inn	1950	715	Wilbur Clark with funding from Moe Dalitz	Wynn Resorts [Steve Wynn CEO] (2000)	2000	2001	Wynn Las Vegas and Encore	2716
Boardwalk	1966	650	Holiday Inn	MGM Mirage [Kirk Kerkorian CEO] (1997)	2006	2006	Waldorf Astoria at City Center	392
Bourbon Street	1980	166	John Harlow Tucker	Harrah's Entertainment [Gary Loveman CEO] (2005)	2005	2006	Plot was turned into a parking lot.	
New Frontier	1942	984	R.E. Griffith and William Moore	El-Ad Properties [Yitzhak Tshuva CEO] (2007)	2007	2007	Nothing has been built yet.	
Stardust	1958	1065	Tony Cornero with funding from Moe Dalitz	Boyd Gaming [Sam Boyd and Bill Boyd CEOs] (1985)	2006	2007	Resorts World (under construction)	3500
Clarion	1970	202	Royal Inns of America	Majestic Resorts [Lorenzo Doumani CEO] (2014)	2014	2015	Nothing new has been developed yet.	
Riviera	1955	2075	William Bischoff	Las Vegas Convention and Visitors Authority (2015)	2015	2016	Part of the expansion of the Las Vegas Convention Center	

Figure 2. Fits-and-starts type of urban change occurs in a concentrated period of *time*: Table of 13 casinos, hotels, and resorts—and their hybrid complexes—demolished between 1993 and 2016 and replaced by new ones along the Las Vegas Strip. In terms of fits-and-starts type of change, it is interesting to note two phenomena in particular in this table: The relatively short time between the opening of the casino-hotel-casino and its demolition (e.g., only 35 years passed between the opening of the Dune in 1955 and its demolition in 1993) and the often vast differences in the original number of rooms and the number of hotel rooms in the new casino-hotel-resort (e.g., the original Sands had 720 rooms and its replacement the Venetian has 3,036 rooms—a more than four-fold increase). Note: In thoroughly conducting this research we found that a lot of existing scholarship about Las Vegas often repeats inaccurate facts and even indulges in popular myth-building. Therefore, to craft this table, we consulted 46 different reliable sources to check and cross-check these facts (for the full table and its many sources see Supplementary Material). Source: Courtesy of Juan Usubillaga, from multiple sources.

driven by corporate investors and private profit is embodied in such large-scale projects. Some historians trace the tipping point of the city from a mafia-dominated desert outpost to a corporate-driven entertainment destination to around 1988–1989 (Wood, 2005). This was when businessman Steve Wynn invested the unprecedented amount of $630 million to build the copper-skinned ultra-casino-hotel-resort called the Mirage. The Mirage created a model for clearing away old gambling hotels of the post-World War II era and replacing them with casinos the size of small castles on the Strip.

The graph below (see Figure 4) illustrates how an increase in hotel room inventory has actually induced demand rather than the other way around. In other words, new hotel-casino-resorts such as the Bellagio and Wynn Las Vegas were conceived not in response to the kind of market demand that conventional microeconomics and real estate development literature suggests, but rather the combination of manufactured obsolescence, future speculation, and generated marketing excitement (starting with highly publicized spectacular implosions) enticed more people to visit and stay in these developments. In fact, "the city has worked on the premise that supply breeds demand—build it, and they will come" (Pollack, 1997, para. 33). This counter-intuitive approach sheds valuable light into what drives the fits-and-starts type of change not only in Las Vegas but also in other contemporary cities of capitalism. Of course, there are exceptions to this pattern, such as when there are financial or political crises or miscalculations that can lead to empty plots of land, land converted to parking lots, or half-finished structures.

4. Case Study, Part 2: From the Desert Inn to Wynn Las Vegas

The businessperson Wilbur Clark came from the city of San Diego in California to Las Vegas in 1944 and built what was originally called Wilbur Clark's Desert Inn, at the time the largest hotel in Las Vegas with 300 rooms and a three-story tower (see Figure 5). The casino-hotel-resort opened on April 24, 1950, the fifth one on a two-lane highway that would later become the Las Vegas Strip, at a cost of $4.5 million. On the first Saturday

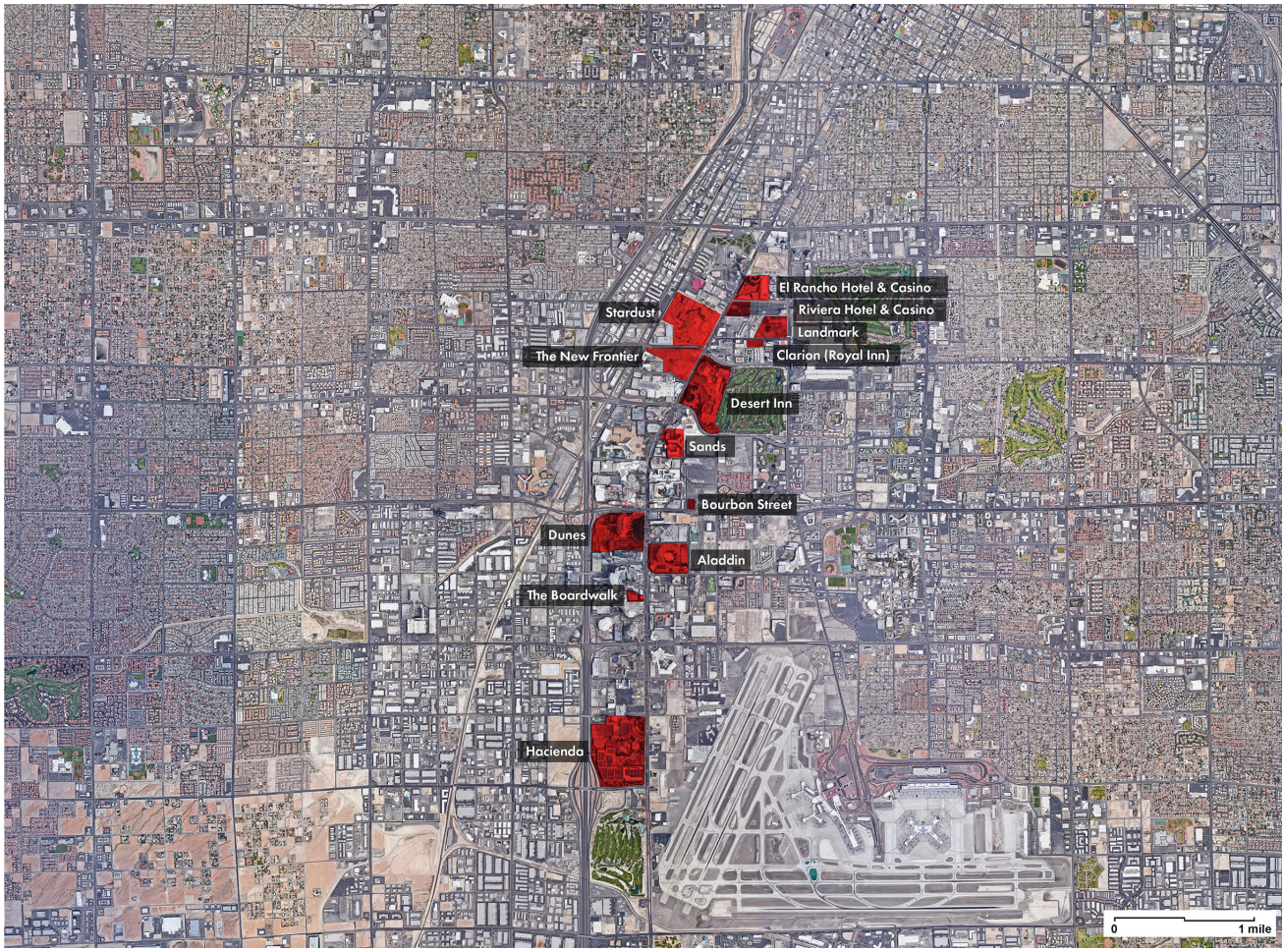


Figure 3. Fits-and-starts type of urban change also occurs in a concentrated amount of *space*: Aerial photograph of 13 casinos, hotels, and resorts—and their hybrid complexes—demolished between 1993 and 2016 and replaced by new ones along the Las Vegas Strip. Source: Courtesy of Juan Usubillaga, based on Google Earth, Google Maps, and historical archives in Special Collections of the University of Nevada Las Vegas Library.

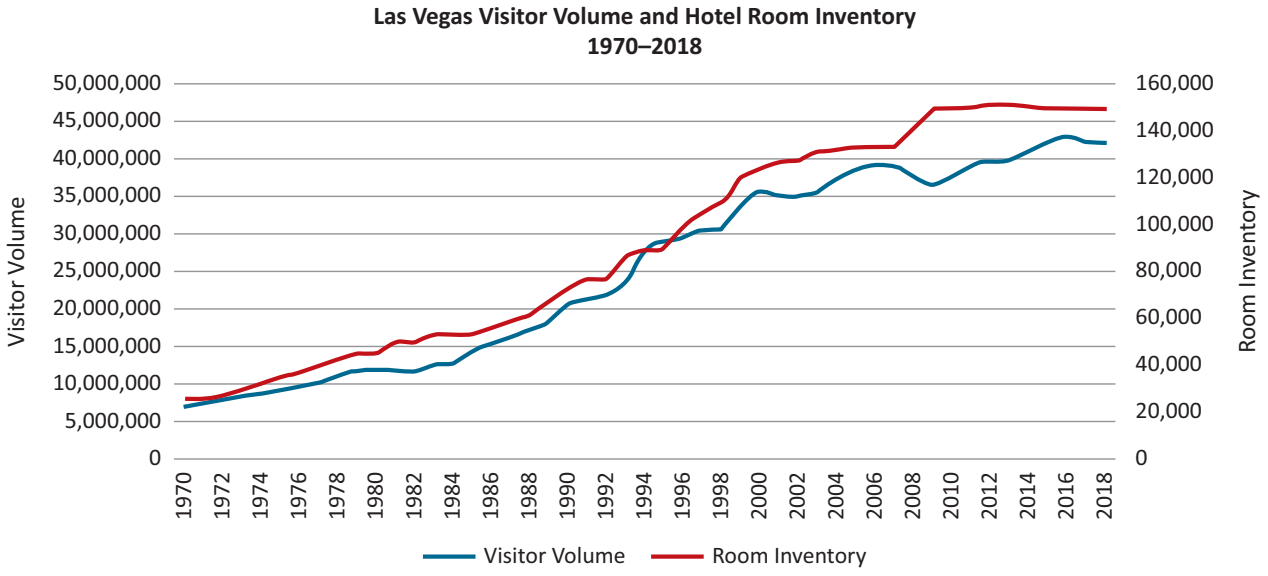


Figure 4. As this graph from the period 1970–2018 indicates, in Las Vegas visitor volume has tended to rise with hotel room inventory, pointing to induced demand. Source: Las Vegas Convention and Visitors Authority Research Center (2018).

after the opening, the Desert Inn casino lost $87,000 in one eight-hour shift, including $36,000 to one lucky winner, but it was the best publicity any casino-hotel-resort could ask for. People flocked to the Desert Inn, and by the following Friday, the casino had recouped its losses, with the first week's profits totaling $750,000 (Russo, 2006, p. 207).

By 1963, the Desert Inn became part of the trend to expand hotels, with a total of more than 5,000 rooms added in the city, which was at the time "the largest, fastest, most concentrated sustained expansion of its kind anywhere in the world" (Denton & Morris, 2001, p. 226). The well-known billionaire Howard Hughes, who in November 1966 rented all of the resort's ninth-floor penthouse suites, bought the Desert Inn in 1967 for $13.25 million after its then-owner and well-known affiliate of the mafia, Moe Dalitz, tried to kick Hughes out because he needed the hotel rooms to accommodate several other wealthy and high-profile gamblers. Hughes's purchase of the Desert Inn laid the precedent for the later corporate era of Las Vegas casino-hotel-resorts by subsequently by other properties such as the Sands, Castaways, Silver Slipper, and Frontier ("Desert Inn chronology," 2005).

In 1988, millionaire Kirk Kerkorian acquired the Desert Inn and operated it for five years before selling it to ITT Corporation. Starwood Hotels and Resorts then acquired the Desert Inn in 1998 when it bought ITT Corporation. However, Starwood Chairman Barry Sternlicht immediately put the Desert Inn on the auction block because, despite a recent $200 million renovation, it was losing money and the company needed the money to pay down debt, strengthen its balance sheet and reinvest in existing assets (Thompson, 1999). In 1999, Sun International Hotels bought the development from Starwood Hotels & Resorts for $275 million cash and company chairman Sol Kerzner hinted already that they had plans a major development on that property (Thompson, 1999).

The next year, Steve Wynn purchased the Desert Inn for $270 million (see Figure 6) supposedly as a birthday gift for his wife, Elaine ("Desert Inn chronology," 2005). Almost immediately, Wynn began a campaign for manufacturing its obsolescence in order to demolish it: "The present [Desert Inn] is too small, too close to the street, it's right up against the sidewalk, there's no room for cabs," he said, adding that "it's a thing from the 50s" and "it's not a competitive facility" ("Wynn plans new Strip resort," 2000, para. 14). Furthermore, he said he could not:

> Protect the employees from the lamination of mistakes that have been made since 35 years ago when Moe Dalitz sold this place….It seems that every time one of the owners stepped up to fix it, they lost their focus, did everything but the right thing….Nothing at the Desert Inn has been the way it should be. ("Wynn tells all," 2000, para. 34)

Figure 5. The original Desert Inn, seen from the front in this image from the 1950s, was pioneering in terms of its size and layout as a casino-resort-hotel on the automobile-oriented Las Vegas Strip. Source: "Photograph of the front of Wilbur Clark's Desert Inn" [ca. 1950s].

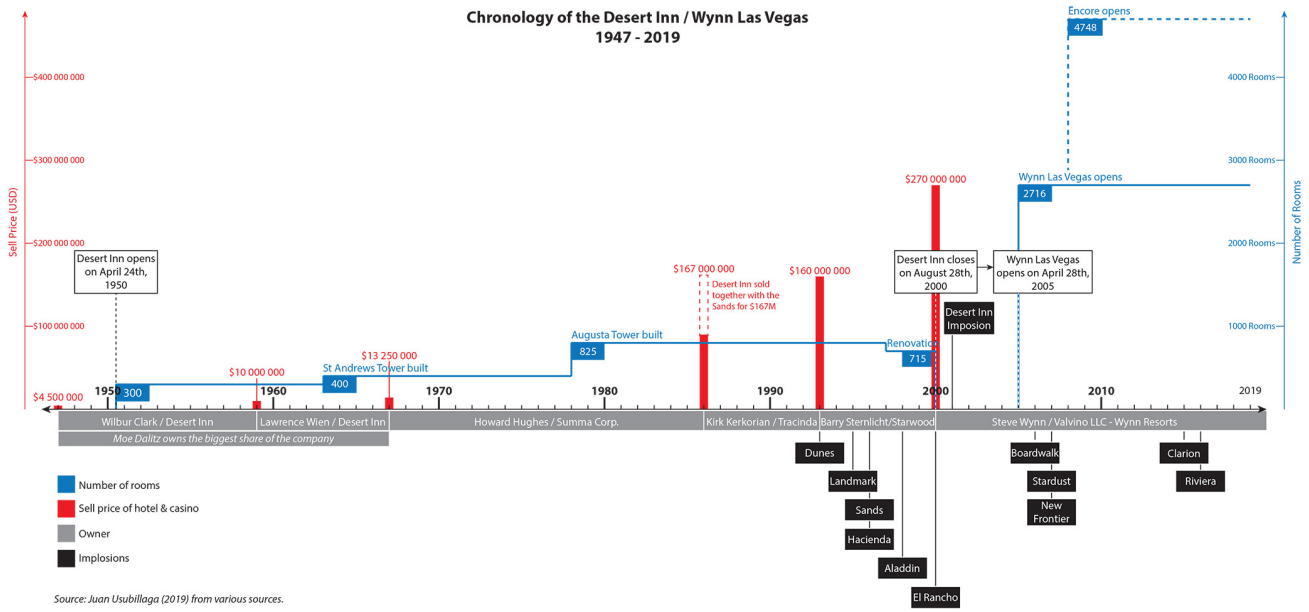
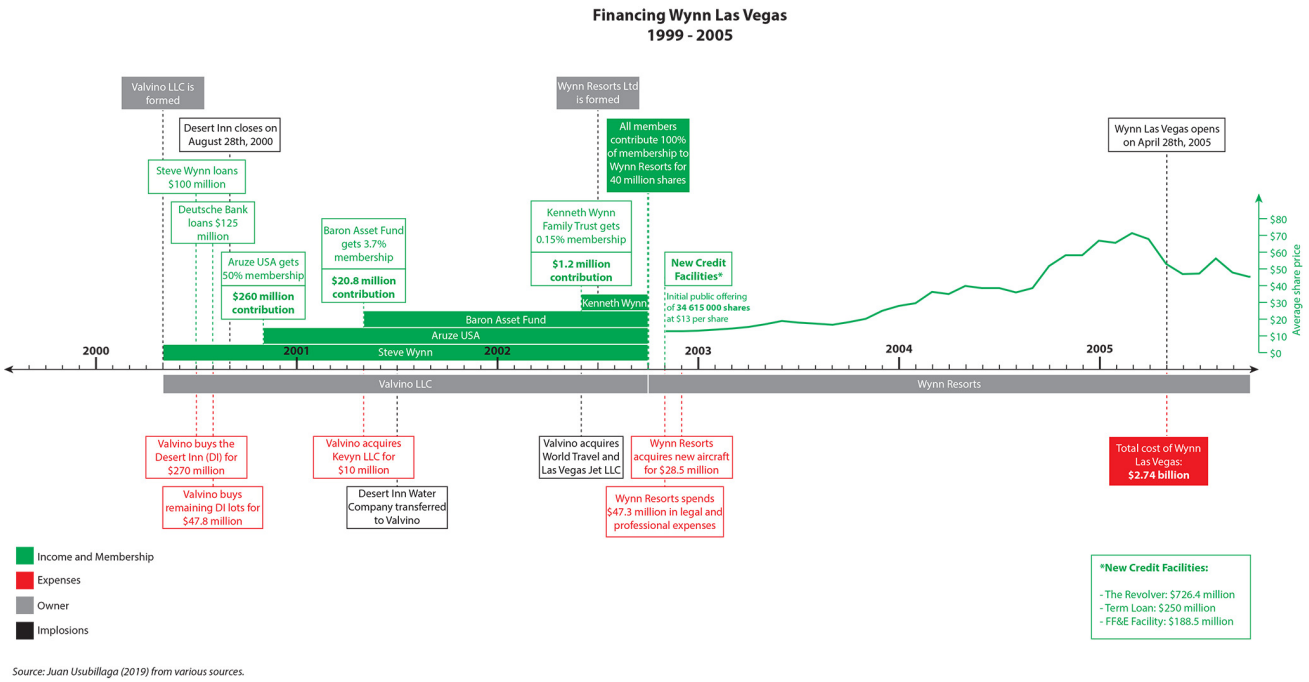


Figure 6. Fits-and-starts at a micro-scale: Desert Inn/Wynn Las Vegas timeline, with the key events being the closing of the Desert Inn in 2000 and the opening of the much larger and much more complex Wynn Las Vegas only five years later in 2005. Source: Courtesy of Juan Usubillaga, based on "Desert Inn chronology" (2005) and Wynn Resorts Limited (2003–2019).

While manufacturing the Desert Inn's obsolescence, Wynn simultaneously began a campaign of future speculation to attract investors, saying that the new development on the Desert Inn site would cause a "shift in the center of gravity from where it's been" and that the resort would naturally have walk-in traffic because of "a little, old pirate gimmick" at the Treasure Island, which was not far from his property line and which drew thousands of gawkers a day ("Wynn tells all," 2000, para. 37). Indeed, in acquiring the Desert Inn he had purchased one of the largest available land parcels on the Strip, with seemingly unlimited potential for new development by claiming that it was "the most powerful piece of real estate in Nevada, possibly in the western United States," and that it was "an extraordinary piece of property, with the opportunity to do just about anything" (Strow, 2000, para. 2). He made sure to highlight other property's advantages, such as rights to huge amounts of water under the land, frontage on the famed Las Vegas Strip, as well as on to major arterial roads such as Paradise Road, Sands Avenue, and Desert Inn Road, and easy access to both the Las Vegas Convention Center and the Sands Expo Center.

Wynn already began financing the project as he was making these public statements (Wynn Resorts Limited, 2003–2019). For example, in April 2000, a new company called Valvino LLC was formed with Wynn being the only shareholder and a $221 million equity contribution by him. Subsequently, in June 2000, Valvino LLC bought the Desert Inn for $270 million, while the next month, Deutsche Bank loaned $125 million to the company. The Desert Inn closed on August 28, 2000, and in October 2000, Aruze USA—the U.S. subsidiary of a Japanese manufacturer of gambling and arcade machines—contributed $260 million and obtained 50% membership of Valvino LLC. In the process, the Deutsche Bank load was repaid. This is just a snippet of the multiple financing arrangements early in the process, but given the ultimate cost of the new and highly ambitious project, much more funding had to be raised (see Figure 7). So, he then embarked on a grueling two-week road show in October 2002 to pitch Wynn Resorts Limited to major institutional investors. He requested one-and-a-half-hour meetings with fund managers who were accustomed to a one-hour time limit. He did every presentation himself and handed out his cellphone number to fund managers (Binkley, 2018, p. 213). His fundraising and speculation about future profits began to pay off early in the process because with no properties open and no revenues, Wynn Resorts stock was trading on pure speculation. It shot up from its initial offering price of $13 in October 2002 to $76.45 a share on March 16, 2005: "[As a result,] Wynn was [now] a billionaire" (Binkley, 2018, p. 249).

The brand new Wynn Las Vegas casino-hotel-resort opened on April 28, 2005, at the cost of approximately $2.74 billion (i.e., more than 10 times the price of the purchase of the Desert Inn and its land) and with 9,000 employees (Wynn Resorts Limited, 2003–2019). The extremely high cost was due to its sheer size and amenities geared towards clients with higher disposable incomes. The Wynn Las Vegas included a casino of 111,000 square feet in floor space and 137 table games, 2,674 hotel rooms in a 45-story tower plus 36 separate villas (see Figure 8), a resort consisting of six restaurants, nightclub, spa and salon, Ferrari and Maserati dealership, wedding chapels, 18-hole golf course, 223,000 square feet of meeting spaces, 76,000 square feet of retail,



Source: Juan Usubillaga (2019) from various sources.

Figure 7. Financing fits-and-starts type of urban change can be complex, time-consuming, and frequently requires multiple sources: Timeline of financing the new $2.74 billion Wynn Las Vegas casino-hotel-resort. Source: Courtesy of Juan Usubillaga, based on Wynn Resorts Limited (2003–2019).

and two theatres, Wynn Theater and Broadway Theater, which opened later in August 2005 (see Figure 9).

During this process, Steve Wynn also rethought the quality and standards of design from a gambling industry perspective:

> Our challenge was to surpass the standards we had worked so hard to set [previously] at the Bellagio. You really can't just do another Bellagio. Is there another level? For that reason we had to go back to very primary ideas. We had to reexamine the most fundamental issues that have to do with design. ("Mr. Las Vegas," 2008, p. 57)

The combined approach of sheer size, mix of facilities, and raising the design standards seemed to pay off a few months after Wynn Las Vegas opened. For example, already in 2005, the casino-hotel-resort's average hotel room occupancy was 92.1% as compared to the average of 89.2% on the Las Vegas Strip, the average daily hotel room rate was $274 compared to the average of $103 on the Strip, and the net revenue for the year was $722 million, with 49% of it coming from gambling activities and 51% from hotel and resort facilities (Wynn Resorts Limited, 2003–2019).

The high hotel room occupancy rates and the equally impressive net revenue for the Wynn Las Vegas in its very first year was due to the creation of a buzz through word of mouth by Steve Wynn and extensive marketing by his company. There was another contributing factor, which was the broader trends in Las Vegas that year. As seen in the graph below (see Figure 10), in 2005, the Las Vegas gambling and hotel markets continued their upward trends with, among other things, a 3.2% increase in visitation, a 13.1% increase in Strip gaming revenue, a 1.3% increase in hotel room inventory, and a 14.9% increase in average daily room rates, as compared to 2004 (Wynn Resorts Limited, 2003–2019).

The implosion of the old Desert Inn and the construction of the new Wynn Las Vegas was not only part of this period of fits-and-starts urban change in the city, but also had longer-term ripple effects. In fact, Steve Wynn had planned a $500 million expansion, with construction on a second tower to build on Wynn Las Vegas's momentum. With an additional 1,300 hotel rooms, he predicted that it would add to his profits, because as fellow casino-owner Glenn Schaeffer suggested, hotel rooms had replaced slot machines as the market's most powerful revenue driver: "Strip operators have twice as many rooms as slots," he said ("Second tower planned," 2004, para. 11). Ron Kramer, then-president of Wynn Resorts Limited, had also realized that a recent refinancing of the company was so popular with investors and banks that money was available for additional spending on the Las Vegas site ("Desert Inn chronology," 2005). The construction of Encore began in 2006 and it opened in 2008. This illustrates how speculation about future profit is an ongoing process rather than being satiated by a singular project.

Like many business owners, property investors and real estate developers, Wynn was involved in many projects in the city, including the demolition of old casinos and the construction of new and trend-setting casino-hotel-resorts such as the Mirage in 1989 and the

Figure 8. View of the front of the Wynn Las Vegas. Compare the size and style of its design with the Desert Inn in Figure 5. Source: Aseem Inam.

Figure 9. The full size and complexity of the facilities of Wynn Las Vegas casino-hotel-resort (along with its subsequent twin, Encore) can be grasped via this floor plan. Source: Aseem Inam.

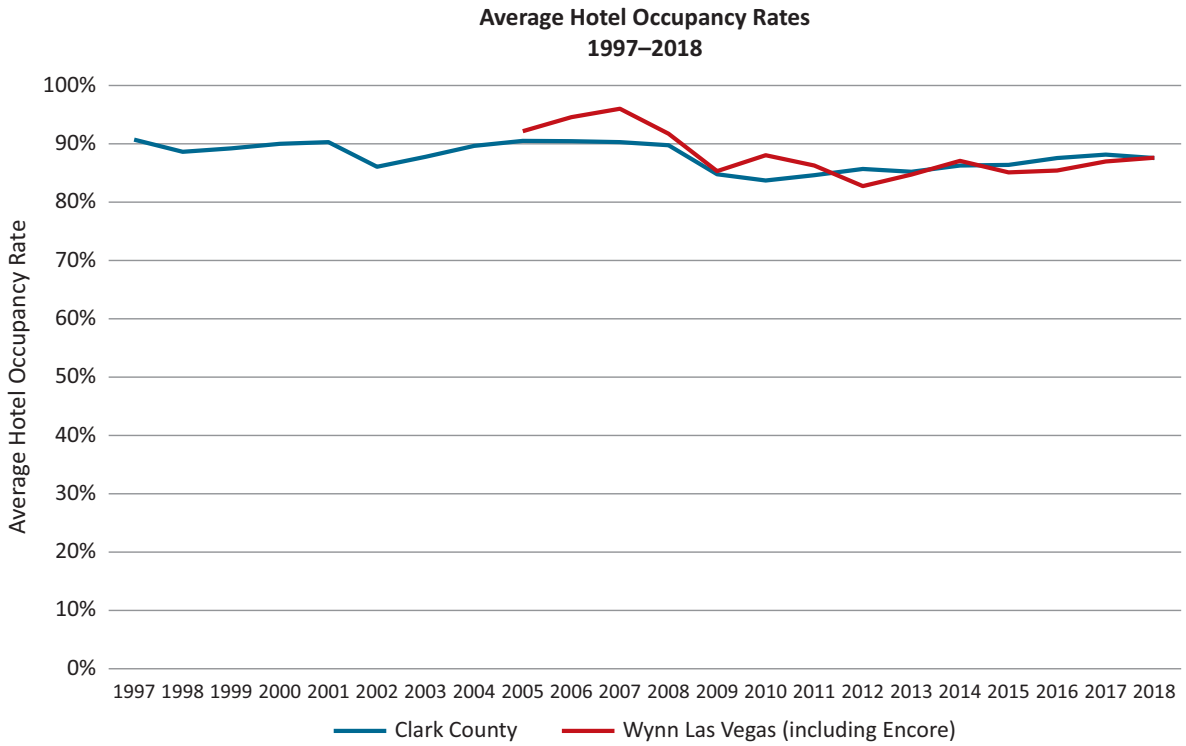


Figure 10. Average hotel occupancy rates in Wynn Las Vegas, compared to average in Clark County (for hotels with gambling revenue of $1 million and over). Sources: Nevada State Gaming Control Board (1997–2018) and Wynn Resorts Limited (2003–2019).

Bellagio in 1998, which involved the implosion of the old Dunes (see Figure 2). Long-time observers of the city acknowledge the role he has played by saying that he had been a prominent and visible Las Vegas gambling industry leader, who not only represented the current era but was also connected with the city's previous eras. For example, the "dream that Wynn realized at the Mirage in 1989 stands as the most important development in Las Vegas in the past twenty years" (Bernhard et al., 2008, p. 183). As happens to long-time business people with a public presence who help drive fits-and-starts type of urban change, there is also a bit of myth-building about them, which then influences how financial analysts and funding institutions perceive them, and which subsequently eases their ability to attract investors for their projects: "Whatever he builds, it will be one up on the last thing he built… it's really exciting for Las Vegas to continue that legacy of creation," said David Atwell, a local casino-hotel-resort broker (Strow, 2000, para. 16), while for Prudential Securities financial analyst Joe Coccimiglio, "[Wynn] tends to build properties that create more [demand] than they can supply" (Strow, 2000, para. 22). Such myth-building is helpful for not only branding purposes but also higher profitability. For example, Frank Luntz, a pollster who had been doing marketing polls for Wynn for years, ran focus groups on the new resort's name and discovered that Wynn's name alone was worth an extra $80 per night for a hotel room. He recommended naming the casino after its developer (Binkley, 2018, p. 241). Wynn followed the advice and reaped its rewards.

5. Conclusion: Insights and Implications

In the material city, fits-and-starts type of urban change creates interruptions and disruptions in the time and space of what might otherwise be thought of as more long-term and slow-moving urbanism. Such change, concentrated in space and time as it is, nonetheless has larger-scale and longer-term impacts not only on those particular parcels of land but also on the surrounding area. While urban practitioners tend to be biased towards continual growth of the city, which implies something new will always replace something old, these patterns of change also reveal that the intended outcomes does not necessarily materialize (e.g., due to financial crises, lack of market demand, problems with construction, and a myriad of other problems). In these processes, what matters are human perceptions and beliefs, including and especially the perceived economic value of an existing building versus the belief in the higher profitability of a newer building. I have adopted an agent-centered approach by focusing on primary decision-makers in such contexts, who are private developers, property owners, and investors. As the Las Vegas case illuminates, it is often large-scale owners and developers who radically reimagine the material city in terms of urban form and space and harness the resources to

extract value from opportunities that few others may perceive. In this manner, the spatial production and reproduction of the city is significantly influenced by the ability of these key actors to buy and sell land, raise and borrow the funds, assemble a team of specialists, realize their vision, and in the process enhance the value of property, which is the bedrock of the capitalist city in the late 20th and early 21st centuries, or, as some authors prefer to call them, "cities of capitalism" (e.g., Stevenson, 2012). I have described a particular kind of fits-and-starts type of urban change driven by the thinking of people like Wynn and his company.

What emerges from this analysis of the literature as well as of the case study are two interrelated ideas, that of manufactured obsolescence and of future speculation, which help drive fits-and-starts type of urban change. In Las Vegas and most other cities in the capitalist system, obsolescence is the state of being which occurs when an object such as a building or a public space or a piece of infrastructure in a city, service, or practice is no longer deemed desirable even though it may still be in good working order. Obsolescence frequently occurs when a replacement has become available that is perceived to possess more advantages compared to the disadvantages incurred by maintaining or repairing the original (Weber, 2002). Manufactured obsolescence occurs when a building is only a few decades old and is structurally and functionally sound, but is made to appear outdated and unsatisfactory for present and future needs. The idea of manufactured obsolescence, usually promoted by real estate agents, private investors, property owners and real estate developers, is to diminish—often radically—the current economic (and sometimes social and even political) value of a current structure or space in order to promote a newer and supposedly better replacement.

Future speculation is not only a corollary of manufactured obsolescence, but also what often pushes for such type of obsolescence in the first place. Future speculation in real estate development is about formulating expectations about the future return on investment based on location, type, and timing of development. While real estate and economics textbooks may highlight the need for formal market analysis in order to gauge demand (e.g., Peiser & Hamilton, 2012), the reality is more muddy, including projects in urbanism that actually create demand where there was no clear a priori evidence of it (e.g., in the U.S., the success of the New Urbanism movement comes to mind) or when an investor or developer bases multimillion dollar decisions on hunches, which are of course informed by knowledge and experience (e.g., Steve Wynn, or as our research has previously documented in Inam et al., 2004). Thus, the material city is a world of things (e.g., buildings and larger scale complexes) that are commodities in which investors take a financial risk with various degrees of calculations and estimations about future return on investment (i.e., profit). Such perceptions and pursuits of future profit are aided and abetted by an arms race for one-upmanship through informal conventions of not only casino owners but those who are integral to the real estate development industry, including financiers, brokers, and designers such as architects, interior designers, and landscape architects. Local governments also function as facilitators of fits-and-starts type of urban change, including in some cases by adopting more of an actively laissez-faire attitude (as in Las Vegas, which includes bending over backwards to accommodate almost any kind of novelty), or in other cities, a more actively supportive role. Governments welcome such types of speculative urbanism because to them new construction symbolizes progress, generates new tax revenue, and creates new economic activity such as jobs.

However, fits-and-starts type of urban change, as embodied in demolition/construction booms, has enormous economic, social, and environmental costs, for example by demolishing entire parts of a city and building large new buildings and complexes. Reusing existing space is the more fiscally, economically, and environmentally sound approach to managing urban change, one that can accommodate growth and innovation while also valuing attachments to the artifacts and landscapes of the past. Lynch (1972) noted that places that grow slowly are often richer, more complex environments with choices and services better suited to the plurality of needs and values of a diverse population. Such places tend to grow in a deliberate manner that values quality of life, the preservation of difference and environment, and place attachment based on emotions and memory. Moreover, building a new structure when an existing one would have served the same purpose can be wasteful. Construction consumes tremendous amounts of natural resources and energy; gypsum is mined in the U.S. for drywall, forest products are harvested in Canada, and China provides U.S. contractors with tons of stainless steel (Weber, 2015). As raw materials and finished products are being harvested and manufactured in increasingly far away locales, they must be shipped longer distances, depending on the locations of their points of origin and consumption. Long-distance trips increase fossil fuel use and carbon emissions and also raise prices for consumers. The construction process itself creates great quantities of waste, which localities must process, dump or export. The bulk of local waste streams is comprised of materials produced by building activity; approximately 160 million tons of construction and demolition debris is generated in the U.S. every year (Weber, 2015). These materials include scrap lumber and other wood products, brick and block, gypsum wallboard, manufactured wood, asphalt shingles and pavement, metals, plastics, concrete, and dirt, as well as salvageable appliances, ornaments, and fixtures. An estimated 60% of the total volume of construction and demolition debris is sent to landfills, where it increases the level of spatially concentrated toxins that may leak into the ground or become airborne emissions.

I now conclude with two implications of this analysis for urban practice. First, urbanists—particularly those with backgrounds in professional fields like architecture, landscape architecture, urban design, and city planning—have traditionally been trained to view the city as an object that is planned, designed, and built according to definitive visions. While urban geographers and historians have studied change for quite a while, such thinking has not yet fully permeated the world of mainstream practice in a meaningful manner. What would be the benefits if urbanism, both as an object of study and as a mode of practice, were to be approached from the perspective of flux rather than just an object? A significant implication of this discussion for urban practice is that those who work towards urban transformation require a concept of the city as flux as ongoing processes and changes, a stream of interactions, and a flow of situated initiatives (Inam, 2014). One way to ground this concept is with urban practices that accommodate and experiment with everyday contingencies, breakdowns, exceptions, opportunities, and unintended consequences that are encountered. Overall, the point is for urbanists to actively conceptualize and continually engage with cities as flux in addition to their three-dimensional materiality. The challenge in getting to this point is two-fold: first, how to reconcile it with a basic human need and indeed, desire, to perceive stability in our worlds, and second, to reconcile the urbanists' need, and stemming often from their design training, to view interventions in primarily fixed, material terms.

Second, there are implications of this analysis in terms of new types of urban practices. Las Vegas has examples of more equitable and democratic types of urban practice that is one potent model for transforming urbanism, such as the active role of labor unions in a city's spatial political economy. However, in the context of this particular analysis, the idea of degrowth holds much promise. The idea of degrowth has been around formally since the Buddhist ethics of economics first practiced by the Emperor Ashoka in the 3rd century BC in India and the anti-industrialist trends in the writings of John Ruskin, Henry David Thoreau, and Leo Tolstoy in the 19th century in the Global North. In the late 20th and early 21st centuries, degrowth has come to mean reducing excess resources and energy throughput from the perspective of ecology while at the same time improving human well-being and social outcomes. Currently, the economic imperative—including in urbanism—is the often implicit assumption that growth is good, while in a degrowth scenario, the goal would be to scale down ecologically destructive and less socially necessary production while enhancing parts of the economy devoted to human well-being and ecological enhancement. More recently, there has been an increasing interest in the relationship between degrowth and urbanism (e.g., Savini, 2021; Xue, 2021), including new spatial strategies and social transformations that challenge the ideology of land scarcity and territorial economic competition which are often embodied in the fits-and-starts types of urban change. Such types of urban practices possess much promise for mitigating the high costs of fits-and-starts type of urban change.

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Conflict of Interests

The author declares no conflict of interests.

Supplementary Material

Supplementary material for this article is available online in the format provided by the author (unedited).

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Article

Change by Activism: Insurgency, Autonomy, and Political Activism in Potosí-Jerusalén, Bogotá, Colombia

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Abstract
Cities today face a context in which traditional politics and policies struggle to cope with increasing urbanisation rates and growing inequalities. Meanwhile, social movements and political activists are rising up and inhabiting urban spaces as sites of contestation. However, through their practices, urban activists do more than just occupy spaces; they are fundamental drivers of urban transformation as they constantly face—and contest—spatial manifestations of power. This article aims to contribute to ongoing discussions on the role of activism in the field of urban design, by engaging with two concepts coming from the Global South: *insurgency* and *autonomy*. Through a historical account of the building of the Potosí-Jerusalén neighbourhood in Bogotá in the 1980s, it illustrates how both concepts can provide new insight into urban change by activism. On the one hand, the concept of insurgency helps unpack a mode of bottom-up action that inaugurates political spaces of contestation with the state; autonomy, on the other hand, helps reveal the complex nature of political action and the visions of urban transformation it entails. Although they were developed at the margins of conventional design theory and practice, both concepts are instrumental in advancing our understanding of how cities are shaped by activist practices. Thus, this article is part of a broader effort to (re)locate political activism in discussions about urban transformation, and rethink activism as a form of urban design practice.

Keywords
autonomy; Bogotá; insurgency; political activism; urban design; urban transformation

Issue
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1. Introduction

The formal sector in cities across the world has struggled to respond to needs and crises in urban populations. According to UN-Habitat (2020), we face a trend of rapidly increasing urbanisation in which over 56% of the world's population today lives in cities (81% in Latin America), and income inequalities for two-thirds of the world's urban population have increased since 1980. In Latin America, for example, two in every three families in need of affordable housing are unable to access the formal market, one tailored to middle and upper social classes (Escallón, 2012, for example, details the Colombian case).

Questioning the effectiveness of the formal sector implies interrogating dominant narratives of urban change and how they overestimate the role and power of institutional actors in the private and public sectors. Underpinning these narratives are conceptualisations of urban design as a profession (for examples of critiques see Bentley, 1998; Rowley, 1994) in which designers work for clients and employers who are ultimately the ones with the power to shape cities (Inam, 2014). On the one hand, some narratives favour change by private investment and assign to the state the role of enhancing market competition (Weaver, 2016). Profit-led development, however, has exacerbated existing inequalities and brought little benefit to the underprivileged (Weaver, 2016). The second set of narratives favours investment from the state and departs from the assumption that only the state can deliver projects that truly benefit the underprivileged. State-led development, however, is

not always successful in doing this and faces challenges related to unstable partnerships between different levels of government (Gao & Ryan, 2021), and can even be instrumental in triggering processes of gentrification, for example (Lees, 2014).

However, these narratives do not exhaust the multiple forces acting on urban change. An emerging counter-narrative departs from extensive and recent literature on urban informality (see, e.g., Bhan, 2019; Inam, 2016; Roy, 2005) and an understanding of change as driven by ordinary citizens in their everyday life. The informal sector is arguably the most powerful force driving urban change since it operates using resources and engaging with formal actors strategically, in a way that is complex and contingent to context (Bhan, 2019; Caldeira, 2016). It is estimated that over 20% of the urban population of Latin America lives in informal settlements (UN-Habitat, 2020), and even in more regulated contexts in the Global North, informal practices have shaped and continue to shape how cities change (Pruijt, 2013; Vasudevan, 2014).

Urban informality as a mode of practice, however, can often be linked to wider political processes and political activism (see, e.g., Miraftab & Wills, 2005). As Caldeira (2016) argues, the work of social movements and grassroots organisations in processes of peripheral urbanisation creates complex and changing political relationships, instrumental in the creation of new citizenships. Furthermore, authors like Banks et al. (2019) highlight how recent debates on urban informality have begun to address notions of agency and the political implications of seeing urban informality as a response to adverse environments. Facing a private sector motivated by profit and a public sector lacking the capacity to address pressing urban needs, communities around the world have built homes, services, and even infrastructure through direct action. By doing so, they have actively opened debates about what is acceptable/unacceptable, legitimate/illegitimate, and legal/illegal (Inam, 2016).

Activist practices, then, are key drivers of urban transformation as they cut across spatial and non-spatial aspects of how the city changes. I argue that they can be understood as a form of urban design practice and doing so allows to challenge some of the dominant narratives of urban change mentioned previously; an understanding aligned with views of urban design that are less outcome-focused (Carmona, 2014) and consider it as a non-professional field (Bentley, 1998). This article aims to contribute to such views by engaging with two concepts developed at the margins of conventional design theory and practice in the Global South: *insurgency* and *autonomy*.

The insight provided by these two concepts is illustrated through the case of Potosí-Jerusalén, an informal neighbourhood in the peripheries of Bogotá, Colombia. Built by families unable to access affordable housing in a context of violence and displacement, this neighbourhood exemplifies how activism can be a driver of urban transformation and trigger changes across scales. In 1983, a group of radical educators moved into the area and became part of the local community to mobilise people to obtain services and infrastructure. Although most of their activities focused on addressing local needs, their insurgent modes of political engagement with the state and other actors extended beyond the area and were instrumental in defining an autonomous form of urban design practice that brought significant changes to the wider district and the city.

This case study is part of a larger research project investigating political activism as a form of urban design practice in Bogotá and Berlin during the 1980s and 1990s. The research explores how activist practices were built through the deployment of tactics and strategies, how they triggered processes of urban transformation at different scales, and how they were conceived in relation to visions of material and immaterial change. The following sections will focus on Potosí-Jerusalén by drawing on research conducted between September 2020 and March 2021. During this period, I reviewed archival data accessible online, including activist publications and articles from *El Tiempo* newspaper in Bogotá, and conducted online semi-structured interviews with two key activists in the neighbourhood. Interviews lasted between 45 minutes and an hour. While archival and secondary data allowed me to reconstruct the events that took place in Potosí from 1982 onwards, the testimonies of activists helped me explore in more detail the rationale and objectives driving their political action.

The article will first give an overview of recent research on activist urban design, before introducing the concepts of *insurgency* and *autonomy* to suggest that theory coming from the Global South is needed in today's context to challenge mainstream narratives of urban change. These concepts will be illustrated through the historical account of the building of Potosí-Jerusalén in Bogotá. Lessons from this case will be drawn to argue how *insurgency* and *autonomy* can shed new light on the way we understand activism as a driver of urban transformation (or an urban design practice), and how Potosí is not an isolated example but part of a larger narrative of urban change based on informal practices that tend to be marginalised by those in power.

2. Activism in Cities and Theorising From the South

2.1. Political Activism and the Political

A starting point to conceptualise political activism in cities is to consider it as a form of participation in political processes. Political scientists such as Norris in the United States (Norris, 2002, 2003, 2005) have written extensively about political activism in relation to existing political institutions and the workings of the state. For her, political engagement happens either through official channels (e.g., facilitated by labour unions, churches, or electoral institutions) or through protest politics or new social movements which bypass

them (Norris, 2003). She acknowledges, however, that modern tactics tend to mix elements from both sides and therefore cannot be categorically labelled as one or the other (Norris, 2002).

In the wider literature on political theory, there are other views that distinguish between two forms of political life: politics (or Police) and the Political (or Spaces of Politics), where the latter encompasses inaugural and disruptive forms of contestation and action (Barnett, 2017). Political theorists and philosophers, such as Arendt (1958), Laclau and Mouffe (1985), or Rancière (1991, 2009) claim that it is action in the realm of the Political which opens spaces of appearance (Arendt, 1958), antagonism (Laclau & Mouffe, 1985), or contestation (Rancière, 2009; see also Dikeç, 2012). For Rancière, for example, the entirety of societal structures is represented in what he calls the *Police*, which assigns specific roles to actors based on an assumption of inequality and defines channels through which they can act (Rancière, 1991, 2009). *Spaces of Politics*, in contrast, emerge from an assumption of equality and it is through its verification (or enactment) that the Police is disrupted and contested (Dikeç, 2005; Rancière, 2001, 2009). Following this, discussions on activism in these strands of political theory distinguish between working through pre-determined channels in the structure of society and working in ways that disrupt and challenge them.

Recent scholarship in geography and urban studies, on the other hand, has brought the discussion on activism to debates around citizenship (see, e.g., Purcell, 2006; Smith & McQuarrie, 2012; Wood, 2017). Wood, for example, understands politics as something that "is grounded in the concrete, in the embodied experience of inhabiting the city, and a recognition that these politics are constituted differently, and in a diversity of ways" (Wood, 2017, p. 19). The Political here, instead of being an alternate state (as in Rancière's foundational approach, for example), is something rooted in practices of the everyday life, which has the power to mobilise, politicise, and foster activism with potential to push for radical change whenever it needs to.

2.2. Activism and Urban Design: Tactical and Guerrilla Urbanism

Discussions on activism in urban design practice also depart from an understanding of change rooted in the everyday life. Bottom-up approaches to urban design have been documented under the umbrella of *everyday urbanism* (Chase et al., 2008) or *DIY urban design* (Douglas, 2014), and there have been diverse practices around the world, such as Urban Catalyst in Berlin or Recetas Urbanas in Spain (Awan et al., 2011), which align with everyday understandings of change and activism. Perhaps one of the most widespread contributions in the field, however, comes from *tactical urbanism* (Lydon & Garcia, 2015), which is described as a form of practice that disturbs the order of things through small-scale actions. These actions are *tactical* (in a de Certeauian sense) in that they are quick, unsanctioned, and represent small but incremental gains in a political struggle. They are posed in opposition to *strategies* or place-based tools used by the powerful (de Certeau, 1984). Examples are citizen-led initiatives to reclaim vacant lots and underused spaces in the city, but they rarely address crucial needs or more structural issues, such as housing or health services. Nonetheless, despite its activist origins, tactical urbanism has slowly been integrated into the workings of the formal sector. Thus, it has arguably been co-opted by the neoliberal agenda (Hou, 2020; Mould, 2014), which has reduced its capacity to tap into the realm of the Political.

Hou (2010, 2020) proposes the concept of *guerrilla urbanism* as a form of insurgent spatial practice against the prevailing political conditions. These are unsanctioned and informal actions by the disenfranchised and underprivileged in their everyday struggles. In contrast to tactical urbanism, this concept resists absorption into mainstream narratives as it comprises design by non-designers. By expanding urban design beyond professional practice, guerrilla urbanism allows the integration of new theories into the field. In Hou's words, tapping into bodies of knowledge beyond urban design theory "enables us to discern and articulate how the dominant structure of the society can be subverted, appropriated, or circumvented in ways that may be invisible to the state or the dominant class, or that they would not openly acknowledge" (Hou, 2020, p. 120). At the core of practices of guerrilla urbanism, then, there is an intention to act in the realm of the Political to contest existing structures of society (or the Police to put it in Rancière's terms) and reclaim spaces for the disenfranchised to design their own space in the city.

2.3. Theory From the South

There is a need in urban design, then, to engage with theories coming from the South and in particular those looking at informal practices as design praxis (Boano, 2014; Kamalipour & Peimani, 2019). Recent scholarship has questioned what decolonising theory means for urban studies (Halvorsen, 2018; Inam, 2016) and the need to see all cities as being equally capable of producing theory (Robinson, 2015, 2016). This is in line with understandings of ordinary cities explored by geographers Jacobs (2013) and Robinson (2015), which challenge the primacy of traditional centres of production of urban theory (e.g., London, New York City, etc.) and advocates for theory to be produced—and cities to be thought—through elsewhere (Robinson, 2015). Cities in the Global South are important sites for this, and concepts emerging from them are particularly important when thinking about activism as a form of urban design practice. Thus, the conceptualisations of insurgency and autonomy that follow will depart from theories coming from the South, rather than their northern counterparts (for theories

on autonomy rooted in northern geographies see, e.g., Hodkinson & Chatterton, 2007; Vasudevan, 2014).

2.4. Insurgency and Autonomy

The first concept coming from the South that I propose to engage with when looking at how activist practice designs cities is *insurgency*. In relation to urban transformation, this concept has been developed by scholars like Holston (1998). He argues how, when used in the context of spatial forms and practices, insurgency emphasises opposition to the traditional narrative that points at the state as the only legitimate source of citizenship. Scholars such as Cornwall (Cornwall, 2002; Cornwall & Coelho, 2006) and Miraftab (Miraftab, 2009, 2017; Miraftab & Wills, 2005) further explore insurgency by looking at how it is useful in defining spaces of political engagement with the state. Activists, in Miraftab's (2017) view, can choose to work with existing organisational structures in spaces of collaboration with the state (*invited spaces*), or against them in spaces of contestation (*invented spaces*). By defining engagement from the bottom up, theories on insurgency liberate the figure of the political activist from a definition departing from formality and institutions (e.g., those coming from political science).

The second concept is *autonomy*, as defined and explored by Escobar. In his book *Designs for the Pluriverse*, he departs from Varela's (1999) minimalist understanding of autonomy as "finding one's way into the next by acting appropriately out of one's own resources" (Escobar, 2018, p. 167) to discuss how this Latin American concept plays out in contexts of ontological struggles in defence of people's territories and lifeworlds (ontological occupations). This reflects the daily struggles faced by communities living in highly informal contexts, who build the city with their own resources to assert their place in the city. Escobar (2018, p. xvii) proposes *autonomous design* as a theoretical and political project in which design can be "reoriented from its dependence on the marketplace toward creative experimentation with forms, concepts, territories, and materials, especially when appropriated by subaltern communities struggling to redefine their life projects." Autonomous design aims at the realisation of the communal: the creation of organisations, social relations, and practices that allow communities to self-create (Escobar, 2018, pp. 165–201). Thus, Escobar's argument implies a reframing of design theory and practice based on design's ability to create new worlds. This view of design praxis aligns with others on activism and urban design, such as Inam's (2014) understanding of urbanism as a creative political act that pushes for radical change in contexts of oppression and resistance, or Hou's (2010) understanding of guerrilla urbanism as the subversion, adaptation, or creation of spaces distinct from those by institutions.

A second Latin American author who has discussed autonomy in the context of social movements is Zibechi (2012, 2018). He highlights the need to understand autonomy as a process of creating other worlds, in which societies develop new entities for decision-making, administering justice, and managing the everyday life of bottom-up spaces; autonomy is not an end-state but is enacted through daily practice. Thus, like insurgency, autonomy helps challenge mainstream narratives of how the city changes by recognising the power of ordinary citizens.

3. Potosí-Jerusalén

Potosí is a neighbourhood at the north-western edge of the locality of Ciudad Bolívar in Bogotá. Its origins are embedded in patterns of violence, displacement, and neglect from the state. Since the second half of the 20th century, Colombian societies have been subject to the co-existence of multiple modes of violence (Sánchez, 1987) that are co-constitutive (Ávila, 2019) and have prevented the consolidation of truly democratic institutions (López, 2016). Violence has become a generalised tool to push forward political agendas, which has made social movements historically scarce compared to neighbouring countries in Latin America (Cruz, 2017). A key characteristic of this violence is how it has caused waves of displacement, with over 6 million people having migrated from rural areas to cities like Bogotá (Centro Nacional de Memoria Histórica, 2013). As they arrive in the city, however, these families struggle to find a place to live.

Housing and urban development policies in Bogotá have historically been unable to accommodate the increasing need for affordable housing. Before the 1991 Colombian Constitution, the provision of social housing relied heavily on government programmes and its direct involvement in the construction of homes through institutions such as the Instituto de Crédito Territorial (Territorial Credit Institute; see Rueda, 2011). Despite numerous changes in policies throughout the years, these institutions lacked the capacity to address the growing housing deficit. Thus, as Camargo and Hurtado (2013) explain, a significant part of the urban population in cities like Bogotá has only been able to access homes through the informal market. This situation worsened with the withdrawal of the state from the provision of housing in the 1990s (for a detailed analysis of more recent housing policies in the country see Escallón, 2012).

Informality, then, has become a generalised mode of production of urban space (Camargo & Hurtado, 2013; Torres, 2009) and families have built their homes in informal settlements through direct action. Potosí-Jerusalén emerged in this context. Before Ciudad Bolívar was urbanised, the area consisted of a few large rural properties owned by a handful of families in Bogotá (Secretaría de Hacienda, Departamento Administrativo de Planeación, 2004). One of such properties was Hacienda Casa Blanca, where the first houses of what would later be known as Potosí were built in 1982.

The hacienda was illegally subdivided by *urbanizadores piratas*, individuals at times associated with criminal or clientelist organisations who sold plots of land cheaply to families arriving in the area (Torres, 2009). Homes were built without property rights and lacking services and infrastructure.

In 1983, a group of radical educators arrived in Potosí to build a community-based space (*escuela-comunidad*) and teach under the principle of social justice (Botero et al., 2017). The project aimed to trigger processes of social transformation by bringing the working class into the classroom and developing political alternatives to capitalism based on Freire's *Pedagogy of the Oppressed* (Ocampo, 2008; Camilo, interview, March 1, 2021). They sought a permanent base in Potosí since they believed this was the place where they could achieve the biggest impact. By 1984 they had built their school: Instituto Cerros del Sur (ICES). Activists and students from the time explain how the school was born with the neighbourhood and grew with it (Marcela, interview, February 8, 2021). The land was bought from *urbanizadores piratas* and they sought help from charities to build their classrooms. During the day, the facilities served as a secondary school for children, in the evenings as a school for adults, and on the weekends as a community space for activist meetings (González, 2002).

Although this was initially an educational project, activists quickly saw the need to address more pressing issues, such as the lack of health services, infrastructure, and utilities (energy, water, and sanitation). Their first actions involved crowdfunding activities to vaccinate children and provide temporary access to energy and water (González, 2002). This broadened their activist agenda: They engaged with local struggles and eventually deployed a wide set of tactics and strategies to push for more permanent access to services and infrastructure (González, 2002). In doing this, they also joined efforts to claim institutional spaces of participation, such as the Junta de Acción Comunal (neighbourhood board) or the Junta Administradora Local (local administrative board).

However, activism came with challenges. Besides the difficulties in engaging with the state, teachers were constantly threatened by local clientelist powers. They were reported to the police as members of guerrilla groups, the most visible leaders received personal threats, and one of them (Evaristo Bernate) was assassinated on 11th May 1991 ("Mataron a Evaristo," 1991). Despite this, they kept mobilising efforts to build much-needed facilities in Potosí. They were instrumental in the creation of wider grassroots organisations, grouping leaders from other neighbourhoods in Ciudad Bolívar and, on 11th October 1993, they organised a general civic strike (Forero & Molano, 2015). This was one of the largest protests in the history of the locality—a protest that forced the Mayor of Bogotá and his cabinet to negotiate and agree to invest in infrastructure, services, and educational facilities (Forero & Molano, 2015; González, 2002).

3.1. Insurgency and Autonomy

3.1.1. Insurgency

Potosí was built from the bottom up by ordinary citizens in their struggle for urban space. Their actions were insurgent in how they opened political spaces of negotiation and contestation to push for urban transformation or, to put it in Miraftab's (2017) words, in how they relied on direct action as means of inclusion. At times they acted through official channels or in partnerships with the state by signing petitions, participating in elections, or working alongside charities. Often their fight to access services started there and on occasions, this led to major gains for the neighbourhood. In 1996, ICES decided to participate in a programme with the District Secretary for Education in which subsidies were given to private schools to take on students from low-income families. This income helped them pay salaries to their teachers (previously they worked as volunteers) and eventually start building bigger facilities (González, 2002).

These *invited spaces* created opportunities for local authorities to participate in and legitimise activist actions. They engaged in the activists' terms, by giving them funding and addressing issues identified as a priority by communities themselves. In this example, ICES activists appropriated an official channel (the partnership with the Secretary for Education) and used it to push their political agenda forward. This reflects a desire to exercise their citizenship rights, as Miraftab (2017) would call it, following their counter-hegemonic interests. However, in other cases, they decided to act against the state when faced with neglect, silence, or inaction from institutional channels. Activists mention how there was a strategic logic in their insurgency. Marcela, a teacher from ICES in the 1990s, describes the day they took over the headquarters of the District Secretary for Education to demand being paid their salaries:

> We were at our limits and were unable to handle it anymore. So, we would say, well, we must take over the Secretary….So we would organise major protests, with buses full of people. I mean, we weren't 20 people, we were 200 or 500 people taking over the 30th Avenue. We would take the secondary school students with us, never the kids from primary school….So our strategy would be to have the negotiators go in first by themselves. They would find a pretext to enter the building and once inside, the buses with the rest of us would arrive. By the time they stopped us from going in, we already had the negotiators inside. So, we wouldn't leave. (Marcela, interview, February 8, 2021)

As Marcela explains, they usually exhausted action through structures of the state before resorting to other tactics. These tactics were carefully planned in relation to the ends sought and were executed with wide support

from community members. The confrontation with local authorities created what Miraftab calls invented spaces of active citizenship (Miraftab & Wills, 2005), that is, spaces to challenge a status quo that neglected and ignored communities in informal settlements.

In Potosí, spaces of political engagement with the state were opened according to their strategic value and how they facilitated the activists' goals. The *tomas* or takeover of buildings described in the quote above were planned to be disruptive, but a space of negotiation with the state was kept open. Having the negotiators already inside while the community protested outside put pressure on those with power to negotiate on the spot. Over time, these tactics became part of a repertoire of political action that was shared with other local organisations. Between 1987 and 1991, activists occupied the headquarters of local authorities and utility companies several times to get access to services and infrastructure (González, 2002).

Activism involved an active and dynamic engagement with the creation of invited and invented spaces of citizen action, which goes back to Miraftab's understanding of *fluidity* in insurgent citizenship practices (Miraftab, 2009, 2017). For her, insurgent practice is fluid in that it moves across and between all spaces of participation as required by specific struggles (Miraftab, 2017). Activists in Potosí deliberately chose which tactics to use depending on the ends sought, and they constantly moved between spaces of collaboration with the state and spaces of contestation against it, as shown in the *toma* of the Secretary for Education headquarters. They also appropriated formal channels like the programme by the District Secretary for Education and used them to further advance their political agenda by strengthening their educational programme. This shows how movements can appropriate spaces created by the establishment to contain dissent and use them to invoke new imaginations of inclusion (Miraftab, 2017).

Insurgency in Potosí, then, became a mode of action that opposed mainstream narratives of urban change and gave power to the families living in the area. Families enacted their citizenship in deciding how to deploy their tactics in ways that enabled them to transform aspects of their neighbourhood that needed urgent work. However, the impact went beyond the neighbourhood scale and triggered wider processes of urban transformation. In Bogotá, political activism in the 1980s and 1990s brought drastic changes in planning policies and the attitude of local authorities towards communities in informal settlements. An example of this is the civic strike in Ciudad Bolívar in 1993. Frustrated by the lack of sufficient institutional efforts to address the needs of neighbourhoods like Potosí, activists in the early 1990s mobilised and created multiple community and youth organisations (Forero & Molano, 2015; Robayo, 2013). Leaders from ICES played a key role in coordinating and articulating these organisations across neighbourhoods since the struggles for infrastructure and services they faced were often shared. On 11th October at 4:00 am, residents from Ciudad Bolívar blocked the main roads in the district and by that same night, the mayor agreed to negotiate. They reached agreements on several issues affecting the district and the city, including investments in water supply and sanitation, waste collection, education, the legalisation of informal settlements, among others (González, 2002; Robayo, 2013).

The civic strike is nonetheless one of many instances of activism and grassroots efforts having a wider impact on the city scale. Authors such as Pava and Escallón (2020) explain how social dynamics in informal settlements in Bogotá have had a very close relationship with institutional efforts and public policies, and how there are historical traces of causal relationships between the two. Therefore, insurgency as a mode of action has far-reaching effects, which goes back to Holston's understanding of insurgent citizenship (Holston, 1998). In the case of Potosí, insurgency was born out of localised action, but had wider impacts at the city scale and embodied alternative futures that subverted state agendas.

3.1.2. Autonomy

ICES activists enacted what Escobar (2018) calls *autonomous design*—they practised the design of themselves and worked towards creating new worlds. They deployed place-based actions using all their available resources (e.g., people, time, materials) in ways that achieved maximum impact. They defined their own norms and refused to work through imposed modes of political engagement (e.g., political parties or guerrilla groups). Their norms were always contested in that they were subject to internal discussions and debates in the group, and contingent on the political context in that they were continuously re-evaluated depending on the opportunities or threats they faced. This involved recurring discussions on how to engage with the state. Activists developed autonomy in how they found ways to "change traditions traditionally," to put it in Escobar's (2018, p. 172) terms. They sought to establish new foundations of their social life not by capturing the state, but by taking back from the state key areas of it.

One of the main aspects that distinguished them from other (more institutional) political actors was how decisions were made by consensus. Activists describe how they avoided voting in meetings. Instead, they engaged in long debates to agree on what to do next (Marcela, interview, February 8, 2021). These debates included community representatives and were hosted by the school on Sundays. They are highlighted by interviewed activists as an important part of their organising efforts since it contributed to strengthening relationships as people made efforts to understand and work across different points of view. Furthermore, one of the conditions for consensus was for people to be assigned specific tasks to put agreements into place and ensure ownership and accountability, which further created trust inside the group.

In their exercise of autonomy, activists defined their visions of change. Ultimately, in their effort to transform society and develop political alternatives to capitalism (González, 2002), they sought to reclaim a sense of dignity when faced with neglect from the state. This involved multiple aspects of their daily life in the neighbourhood, from housing to infrastructure (Camilo, interview, March 1, 2021). However, the means to achieve this were heavily contested. An example is a recurrent discussion of whether ICES activists should participate or not in local elections. There was a pressing need to access decision-making spaces and leaders such as Evaristo Bernate were seen as key to represent them in such spaces. He led a group of activists to run for elections to the Junta de Acción Comunal in 1987, which triggered a debate within the organisation on whether they should become part of the structure of the state (González, 2002). Some saw in this the potential to achieve long-term urban transformation, while others saw it as contrary to their political values and principles.

A similar discussion took place in 1996 when they signed a funding partnership with the District Secretary for Education. Although this provided much-needed funds to pay teachers and buy class materials, many activists felt that signing the partnership meant being complacent with efforts to privatise education. In her interview, Marcela explained:

> So there was a tension in considering whether or not we needed to be within the state or stay out of it to transform our reality….Would being part of the state mean we were co-opted, or would it definitely trigger the social transformations that we sought?….Even the discussion on whether to participate in the programme by the Secretary for Education was very strong because many, including myself, would question whether that would contribute to the privatisation of education. Ultimately, as the school-community, we were conscious of the important role of public education in social transformation. But many educational institutions in the locality, especially the low-quality private ones, did not have this clear and would take the programme as a way to increase their resources and gain profit. (Marcela, interview, February 8, 2021)

Thus, discussions of means and ends were a recurrent element embedded in their political action. This had concrete material implications in the way the city was transformed, since decisions made there allowed them to access institutional resources and capacity to carry out projects and works at a wider scale. These discussions also went beyond individual leadership and became part of their way of doing things. When Bernate was assassinated, for example, ICES activists recalibrated their actions and continued their work. This shows how autonomy is a long-term process and, as Zibechi (2012) explains, involves an understanding of it as an aspect of a society in movement (or worlds in movement for Escobar). For him, a key characteristic of urban activism in Latin America is the way it mobilises entire societies like the one living in Potosí, rather than cross-cutting sections of them (e.g., along class issues only).

As explained earlier, this process of mobilisation is an example of an autonomous design praxis in which the community practised the design of itself (Escobar, 2018). In line with Escobar's conceptualisation, this understands the communal not as a precondition but as a product of social interactions within the group: It was through the creation of social relations (e.g., between ICES teachers and neighbours), decision-making processes (e.g., consensus-based rather than majority-based), and the development of tactics and strategies to engage with external actors (e.g., the state) that the community was created. This is based on an assumption that "people are practitioners of their own knowledge" (Escobar, 2018, p. 184), not someone else's (e.g., external experts') knowledge. Thus, Potosí as a neighbourhood was designed and built from local needs and practices born out of activists' understanding of the realities they faced and the context they operated in.

Finally, participation in local institutions also helped scale up their political action. The election of ICES activists to the Junta de Acción Comunal in 1987 allowed to bridge efforts with other local councils to form a union called JERUCOM in 1990, which became very influential in local politics (González, 2002). This was particularly important given that some of the infrastructures and services they were fighting for were also needed in surrounding neighbourhoods. As years went by, JERUCOM activists linked up with other groups to form Unidad Cívica—the organisation driving and planning the 1993 civic strike mentioned earlier.

4. Conclusions

Relocating political activism in discussions about urban change helps rethink current design practices rising from below and suggests a shift from urbanist activism to activist urbanism; from activist agendas born out of design practices (e.g., tactical urbanism) to design practice emerging from activist agendas. However, to fully unpack the implications of such a shift, more theory on the type of urban transformation it entails is needed. Experiences from the Global South are essential for this to challenge the primacy of traditional centres of production of urban theory and join efforts to decolonise theorisation. In this sense, although the case of Potosí is an illustrative example of an activist design practice, it still needs to be brought into conversation with different experiences in other cities. Furthermore, explorations of concepts, such as insurgency and autonomy need to tap into (and allow revaluation from) experiences elsewhere.

The building of Potosí in Bogotá is an example of how political activism can transform cities in ways that challenge mainstream narratives of urban change. It is not an

isolated or exceptional phenomenon, but rather part of larger struggles that tend to be ignored or marginalised in the way change is conceptualised. Looking at the case as both an activist *and* a design practice departs from the assumption that cities constantly change by the everyday action of ordinary people. Furthermore, the use of concepts like insurgency and autonomy as theoretical lenses help advance our understanding of activism as a driver of urban transformation in several ways.

Firstly, both concepts help challenge dichotomies between state-led and citizen-led practices. As Miraftab (2017) argues, these dichotomies are used by powerful actors to control dissent as they celebrate actions through official channels while criminalising those that are against them. The fluid nature of insurgent practice challenges such official narratives as it involves moving across and utilising both invited and invented spaces of participation as required by specific struggles, as well as appropriating formal channels to serve activist agendas. This brings to the forefront discussions about becoming part of the state to achieve the desired goals, which goes back to Escobar's understanding of autonomy. Through practice, and in response to context, activists develop traditions of engagement with the state, as well as ways to "change those traditions traditionally" (e.g., through consensus-based decision-making; Escobar, 2018, p. 172).

Secondly, insurgency and autonomy allow us to further explore how the deployment of tactics and strategies build an activist practice. Cases like Potosí demonstrate how activist action can be both tactical and strategical (which challenges de Certeauian understandings of these terms), as community groups decide how to engage with the state and under what terms. Insurgency here entails a strategic logic in which collaboration and contestation are instrumental in advancing activist agendas. Furthermore, autonomy allows uncovering ways in which activism creates new (*other*) worlds with their own forms of organisation and decision-making structures, which further adds to the strategic value of activist tactics. There is a particular challenge here, however, in reconciling these terms in ways that do not depoliticise them and prevent them from being absorbed into the neoliberal agenda and the formal sector (as happens in tactical urbanism). This is critical when bringing lessons from historical cases into conversation with today's context of practice. Some of the tactics used by the community in Potosí in the 1980s (e.g., engaging directly with private providers in their struggle for services) nowadays would run the risk of contributing to the withdrawal of the state in providing access to such services and infrastructure.

Thirdly, both concepts are useful to connect activist practice with wider discussions on means and ends, especially those coming from prefigurative politics and utopian thinking, concepts widely discussed in the literature on activism and political theory. Escobar's notion of autonomy is particularly relevant here. As shown in the case of Potosí, navigating tensions between visions of urban futures and the use of tactics and strategies (e.g., discussions on becoming part of the state) pose challenges to the management of consensus, contradictions, and disagreements within activist groups.

Finally, the two concepts highlight issues of scale and how activist practice scales up urban transformation. In this article, scale emerged in how insurgency impacted wider urban-making processes, as well as in how autonomy unfolded as a process throughout years of political action. In future research, addressing scale as a fundamental concept in design discourse would be instrumental in connecting activist praxis with other theories and forms of urban design practice.

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Conflict of Interests

The author declares no conflict of interests.

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