Urban Planning
2025 • Volume 10 • Article 10273
https://doi.org/10.17645/up.10273

cogitatio

ARTICLE

Open Access Journal

Berlin Mix (Berliner Mischung) Revisited: An Inventory of Commercial Courtyards

Fiona Lingenhöle, Andreas Brück, and Lech Suwala

Department of Urban and Regional Planning, Technische Universität Berlin, Germany

Correspondence: Lech Suwala (lech.suwala@tu-berlin.de)

Submitted: 3 March 2025 **Accepted:** 9 October 2025 **Published:** 26 November 2025

Issue: This article is part of the issue "Planning for Locally Embedded Economies in the Productive City," edited by Lech Suwala (Technical University Berlin), Robert Kitzmann (Humboldt University Berlin), Sebastian Henn (Friedrich Schiller University Jena), and Stefan Gärtner (Institute for Work and Technology), fully open access at https://doi.org/10.17645/up.i436

Abstract

The stylised Berlin block or *Berliner Mischung* ("Berlin Mix," a form of mixed-use development) can be defined as a multi-story inner-city housing (tenement) and working estate with one or more commercial courtyards from the early days of industrialisation. It features compact and dense rows of shops incorporated into the ground floor of the block facing the street, apartments on the floors above and in the side wings, and diverse commercial activities (retail, crafts, light manufacturing) with storage, production, and workshop facilities in the back and courtyards. Although largely abolished after the Charter of Athens, Berlin's commercial courtyards often proved resistant and even experienced a renaissance after Germany's reunification, evolving into a mixture of housing, artisans, industry, trade, and culture. The principal objective of this article is to investigate whether this mixture is still prevalent within commercial courtyards despite gentrification, a decline in manufacturing, and the tertiarisation of the economy, or precisely because of novel technologies, the resurgence of the productive city, and accompanying urban agendas. Methodologically, we investigate functional mixed-use development using an indicator-based sample of 35 former Berlin-owned commercial courtyards (now run by a commercial company), divided into four types of courtyards: Integrated Berlin Mix Courtyards, Adjacent Courtyards, Autonomous Courtyards, and Extended Berlin Mix Courtyards. Our findings reveal several "New Berlin Mix" sub-types, including an inner-city Integrated Berlin Mix Courtyard, which loses diversity to Autonomous Courtyards on the outskirts. This raises questions about the limits to the productive city in Berlin and the role of planning amidst these trends.

Keywords

Berlin Mix; commercial courtyards; economic gentrification; mixed-use development; New Leipzig Charter; productive city; urban production

© 2025 by the author(s), licensed under a Creative Commons Attribution 4.0 International License (CC BY).

1. Introduction

Mixed-use development, a guiding principle in European cities for the past three decades, is rooted in urban imperatives such as compact cities and cities of short distances. From an economic standpoint, these principles culminated in a renaissance of productive cities within the New Leipzig Charter, building on the rediscovery and return of local economies, urban manufacturing, and novel technologies—and their ability to reintegrate tangible production into inner-city areas (Suwala, Kitzmann, et al., 2025). Grounded in the historical evolution of Berlin's mixed-use development and the concept of the productive city, this article develops a working definition of the "New Berlin Mix" based on attributes of functional mixed-use development. Against this backdrop, we investigate whether the Berlin Mix (*Berliner Mischung*) is still prevalent today by linking it to four current types of commercial courtyards (Integrated Berlin Mix Courtyard, Adjacent Courtyard, Autonomous Courtyard, and Extended Berlin Mix Courtyard) and suggesting novel sub-types of the "New Berlin Mix" based on an inventory of their locations, their commercial activities, the extent of urban production, and their integration into the surrounding urban environment. The article addresses two key questions: (a) How can a "New Berlin Mix" be defined? and (b) What opportunities do specific types of commercial courtyards offer for achieving a functional mix of uses (and in which locations)?

Our analysis is based on a sample of 35 commercial courtyards from Berlin's largest private commercial property owner (GSG Berlin, formerly known as Gewerbesiedlungs-Gesellschaft), which includes a fairly representative cross-section of various courtyard typologies across the city. A multi-method framework was applied that pools web and literature research, on-site inspections, and a comprehensive quantitative inventory of all activities and surroundings with georeferenced GIS analyses and radius searches, as well as qualitative ex-post interviews. The results show that a "New Berlin Mix" integrates a broad variety of use categories, including residential use (albeit outside of the block), urban production, and vibrant environments with local amenities and social infrastructure. Interestingly, this "New Berlin Mix" can also be found in Adjacent and even Autonomous Courtyards on the outskirts, while it seems to lose ground in the city centre. This highlights trends of industrial displacement, commercial gentrification, and a rather outward shift of production activities away from the city, which contradicts the idea of the productive (inner) city.

This article is organised as follows: Section 2 provides the theoretical background about mixed-use development in general and the origins of the stylised types of Berlin Mix courtyards in particular. Section 3 elaborates on the methodology, presents results based on the theoretically informed criteria, and then summarises high-, middle-, and low-performing groups of courtyards according to their type and location before discussing them in more detail. Section 4 concludes and reflects on the research design and the relevance of a "New Berlin Mix" for urban planning and offers a brief outlook on potential future developments and possible trends—while reflecting on implications for urban planning in Berlin.

2. Theoretical Background

2.1. Mixed-Use Development: Definition, Ideas, and Operationalisation

Various contemporary spatial movements and visions, imperatives, approaches, and models such as the compact city (Breheny, 1992), the city of short distances (Wegener, 1994), along with the rediscovery of local economies (Birkhölzer, 2000; Henn et al., 2020) and urban manufacturing (M. Brandt et al., 2017;

Läpple, 2013; Martin & Grodach, 2023) within a productive city (Gärtner et al., 2021) point to mixed-use development as a fundamental ingredient and guiding principle for sustainable urban planning in Western Europe from an economic perspective (Aring et al., 1995; Coupland, 1997; Rowley, 1996; for similar developments in the US classified under new urbanism, see Gyourko & Rybczynski, 2000).

The guiding principle of mixed-use development has manifold origins. It was the subject of general debates about the "European City" and "urbanity" (e.g., Häußermann & Siebel, 1997; Montgomery, 1998), it appeared in seminal contributions about the economic and societal revival of inner-city areas (e.g., Jacobs, 1962; Witherspoon et al., 1976), and it is often quoted as an imperative in policy documents (Breuer et al., 2000; Commission of the European Communities, 1990; Department of the Environment & Welsh Office, 1995; zur Nedden et al., 2015). All of this disembogued within the New Leipzig Charter (Bundesministerium des Innern, 2020) and can be best understood as a reaction to the tendency towards an increasing spatial separation of functions in urban areas as heralded by the Athens Charter (a document advocating rational principles of town planning from 1933). The Athens Charter was driven by the availability of individual means of transportation, the emergence of large housing estates on the outskirts, and the creation of non-integrated greenfield retail locations (shopping malls), resulting in suburbanisation after World War II (Frerichs et al., 2018, pp. 65–67; zur Nedden et al., 2015, p. 14). Simultaneously, there are various arguments and reasons for mixed-use development, such as the "desire to limit sprawl, preserve open space, reduce automobile dependence, limit the expense of providing and maintaining infrastructure in low density environments, achieve housing and employment goals, and increase sustainability" (Rabianski et al., 2009, p. 206). All these imperatives have given rise to specialised discourses on mixed-use development from aesthetic-environmental, socio-relational, regulative-planned, and critical perspectives in recent decades (for an overview, see Geyer, 2024).

But what is mixed-use development from an economic perspective? As with most terms in academia, there is no widespread consensus on the definition of mixed-use development. The definition depends on the discipline, perspective, objective, and purpose of the analysis. If we depart from Jacobs, mixed-use development is one of the four decisive factors for thriving cities, next to compact building blocks, old buildings, and population density (Jacobs, 1962, pp. 150–151). Moreover, mixed-use development is a spatial organisational principle that primarily comprises the coexistence of different existential needs, such as living and working or consuming and disposing, as well as education, recreation, and participation in mobility, communication, and community life (Rowley, 1996; Wiegand, 1973). From a real-estate and economic perspective, mixed-use development needs to encompass three or more functionally and physically integrated revenue-producing uses (e.g., retail, office, residential, hotel, and/or entertainment/cultural/recreation; Schwanke & Urban Land Institute, 1987; Witherspoon et al., 1976). It aims at increasing the efficiency of land use by creating synergies, agglomeration effects, or cost–benefit relationships between different yet complementary activities (also referred to as multifunctional land use; Foord, 2010; Lagendijk, 2001; Rodenburg et al., 2003; Ryckewaert et al., 2021; Vreeker et al., 2004). In recent years, tangible commercial and industrial activities subsumed under the term "urban production" have reappeared as important and desired ingredients within economic mixed-use development as facilitators, revitalisers, and intermediaries for local economies at smaller scales in urban settings through both low-tech, high-touch, and advanced technologies (M. Brandt et al., 2017; Grodach & Martin, 2021; Herrmann et al., 2020; Läpple, 2013). The activities range from consumer goods, food products, and clothing to repair services (Meyer & Schonlau, 2024; Piegeler & Spars, 2019).

There are various quantitative and qualitative classifications and categorisation measures that help to operationalise (economic) mixed-use development (Aring et al., 1995; Breuer et al., 2000; Foord, 2010; Frerichs et al., 2018; Hoppenbrouwer & Louw, 2005; Rowley, 1996; Ryckewaert et al., 2021; Wiegand, 1973; zur Nedden et al., 2015):

- Purpose of mixed-use development: social and/or functional mix;
- Components of mixed-use development: social (e.g., income groups, ethnicity, social strata, educational levels), and functional (e.g., housing, production, trade, crafts, services, retail, culture and leisure, restaurants, tourism, social infrastructure, civic facilities, public facilities);
- Granularity/scale of mixed-use development (e.g., vertical/horizontal mix in the building, vertical/horizontal mix at the level of plots or building blocks, vertical/horizontal mix at the level of the neighbourhood or district) and its evolution in time;
- State of mixed-use development (e.g., planned, arranged, perceived, and/or lived).

and urban production therein (Brixy et al., 2024; Meyer & Schonlau, 2024; Piegeler & Spars, 2019):

- Material (e.g., tangible goods or branches), technological (e.g., high-tech, low-tech, high-touch), or sectoral delineation (e.g., IT, cultural-creative, health, crafts);
- Territorial delineation (e.g., urban, peri-urban locations according to official administration status, category, and/or land-use models based on population density);
- Variety within urban production (extent and mixture of commercial and industrial uses).

Although there is widespread consensus in Western Europe about the desirability of mixed-use development, it is no panacea. In other words, existing components of mixed-use development do not automatically lead to a desired state of lived mixed-use development (*gelebte Mischung*). Planned and arranged settings do not solely consist of tangible components but also incorporate non-tangible ingredients such as urban experiences, the actual nature of uses, understandings of public and private spaces, and a sense of belonging, among many other components that must be negotiated and often lead to substantial conflicts (Geyer, 2024). Too much diversity might lead to excessive offers, conflicting land uses, social tensions, or complex negotiation processes resulting in urban stress, residential gentrification, and undermining the sense of belonging or urban identity. By contrast, too little diversity fosters hegemonial structures, and sometimes undesired agglomerations or negative externalities of economic activities (e.g., hotspots for nightlife or rentier communities), as well as industrial displacement and commercial gentrification (Burton, 2000; Chapple & Loukaitou-Sideris, 2019; Ferm, 2016; Grodach & Martin, 2021; Heider & Siedentop, 2024; Hoppenbrouwer & Louw, 2005; Lynch, 1981; Roskamm, 2024; Sharmin et al., 2019).

2.2. Berlin Mix: Origins, Characteristics, and Ensembles

Our perspective on mixed-use development in Berlin is a functional one. It unites the tangible components (built infrastructure, functional categories of utilisation) with economic concerns, such as the existence and variety of commercial activities and urban production at the scale of a building block, particularly in commercial courtyards as the central unit of analysis. Therefore, the Berlin Mix (also known as the *Berlin Block*, *Kreuzberger Mix*, *Kreuzberg Blend*, or *Luisenstädtische Mischung*; Bodmann & Rieger, 1988; Fiebig et al.,

1984; Hausmann & Soltendieck, 1986; Hoffmann-Axthelm, 1993) serves as our starting point. Since this concept has undergone a versatile transformation since the beginning of industrialisation, which has significantly influenced its contemporary understanding, we take a detailed look at its origins, with a particular emphasis on commercial courtyards.

Rapid industrialisation, new infrastructures, consolidation of land parcels, and working opportunities in cities led to rural–urban migration and tremendous growth in metropolitan regions of Western Europe starting in the second half of the 19th century. Next to large-scale industrial production that had its original locations just in front of the medieval city gates and later moved to the outskirts of the city (Krätke & Borst, 2000; Zimm, 1959), particular inner-city commercial areas developed as a continuation of artisanal traditions on a quasi-industrial scale (e.g., Baumgart, 2001; Coupland, 1997; Suwala & Franke, 2025). In Berlin, these artisanal traditions were locally embedded, particularly in Luisenstadt (today: Kreuzberg), a southeastern extension of the medieval town where a specialised and geographically concentrated milieu of commercial areas evolved within residential areas even before the eve of industrialisation (Bascón-Borgelt et al., 1983). This is the main reason for the agglomeration of commercial courtyards in Kreuzberg to this day and why we chose Berlin as our site of investigation in the first place. In contrast, the tenement houses in northern districts of Berlin (Wedding, Moabit, Prenzlauer Berg), which were incorporated later, were merely built for workers employed by large-scale industries and conglomerates such as mechanical engineering (*Schwarzkopff*, *Borsig*, *Wöhlert*) or electricity (*Siemens*, *AEG*). The courtyards located in the rear rows served residential rather than commercial functions (Hoffmann-Axthelm, 1993; Stimmann, 1993; Zimm, 1959).

In this realm, Hoffmann-Axthelm (1984a) accentuates the structural, spatial, and organisational integration of the Kreuzberg Mix (historically more precise: *Luisenstädtische Mix*) at the end of the 19th century, both within and just outside of former medieval Berlin, as follows:

> The workshop business—or "Stockwerk" factory—was no longer a craft but an attempt by a highly specialised craft milieu to respond to the wave of industrialisation. The Kreuzberg Mix was not a question of company size, number of employees, or mechanisation, but of a particular societal culture. At its essence, it is industrialisation at the level of everyday craftsmanship, including its forms of cooperation, qualifications, time patterns, and practical design, as well as the workplace, materials, and characteristics of the product. In other words, an industrialisation within the retained culture of independent producers.…The level of cooperation in the factory was simulated based on prior artisanal collaboration by forming commercial chains. These commercial chains, within the industry…or across industries…reproduced the factory-based division of labour of the 19th century…after workshop organisation in spatial proximity came the commercial transverse buildings, and later the commercial courtyards, the side wing, and converted garages of the traditional Kreuzberg Mix. (Hoffmann-Axthelm, 1984a, pp. 16–17, own translation)

In this way, the logic of industrial rationality and mass production could be substituted and partly reproduced at the local mixed-use level by saving time and distances, and through high specialisation, without entirely abandoning the artisanal lifeworld (Stimmann, 1993).

It is worth noting that the often-romanticised depiction of the Kreuzberg or Berlin Mix as a historical role model for a felicitous mixed-use development is misleading, as paradoxes and counterbalances were and are

at play here (Murrenhoff & Stollmann, 2023; Saad, 2016; Suwala & Franke, 2025). On the one hand, the functional and social mix was desired by contemporary planners (e.g., *Hobrecht*) during its historical inception, with workshops, shed/depot factories, and, to a much more limited extent, in commercial courtyards. The built infrastructure allowed for a functional mix, even at the ground level, and was considered an adaptive system between living and working areas. In times of economic crisis, the living function would be extended, while in boom phases, the workshop space would grow. In addition, later commercial courtyards were built with universal and flexible floor plans to accommodate a variety of commercial purposes (Bodmann & Rieger, 1988; Häußermann & Kapphan, 2002; Hoffmann-Axthelm, 1984a). On the other hand, from the beginning, this Berlin-specific mixture exploited the prevailing building regulations in the land-use plan and was based on massive land speculation, while optimising the utilisation of property and land. Front residential buildings were used as decorative and aesthetic elements to cover the commercial precarity in the backyards, which had to cope with the economic realities of mass production, and which had developed an alternative model of high specialisation or subcontracting work. For this purpose, many workers who migrated from rural areas were employed in labour-intensive and rather low-technology and high-touch activities—and often resided in tight and overcrowded conditions (Baumgart, 2001; Bodmann, 1984; Hoffmann-Axthelm, 1984a, 1984b).

The original Berlin Mix was a non-altruistic community of purpose that evolved from structural, social, economic, and demographic constraints and that followed a contradictory endeavour to simultaneously separate and combine living and working functions. Even the commercial courtyard in its later form at the beginning of the 20th century had, in principle, already cancelled the "consensus of the mix through speculative ruthlessness and exploitation of permitted development area" (Hoffmann-Axthelm, 1984b, p. 58). Moreover, the widespread reminiscence and popularity of the Berlin Mix largely stems from time periods when the Berlin Mix was in danger: either from being swept away and replaced in the 1960s and 70s (Bascón-Borgelt et al., 1983), when not meeting contemporary working and living standards in the 1980s and 1990s (Stimmann, 1993), or when being gentrified from the 2000s onwards (Saad, 2016). Certain events—such as the International Building Exhibition in 1987, the reunification, and novel planning frameworks (*Flächen- und Gewerbesicherungskonzept* from 1993)—also brought renewed interest in commercial courtyards to the fore. In times of economic decline—like during the division of Germany—in West Berlin other functions (e.g., kindergartens and other social infrastructures) took over and created multifunctional neighbourhoods around commercial courtyards without too much planning. Later, between the 1990s and mid-2000s, artists, cultural/creative activities, and industries enriched and took over many courtyards, also as a consequence of an economic downturn across the entire city. In addition, unsettled property rights in the years after reunification, especially in former East Berlin, gave rise to squatting and appropriation of spaces and, in turn, introduced a novel and adjusted mix (Holm, 2014; Mundelius, 2006). Since then, residential, technological, and platform gentrification have also had displacement effects on commercial activities in courtyards, especially in central-city tenement housing quarters (Gergs et al., 2025; Glatter & Sturm, 2020; Schmidt et al., 2014), despite a great deal of planning efforts to safeguard these areas (e.g., the *Stadtentwicklungsplan Wirtschaft*, or Urban Development Plan for the Economy, in 2011, 2019, and 2024; Suwala et al., 2021).

To summarise, the original Berlin Mix—which we refer to as the Integrated Berlin Mix Courtyard (*Gewerbehof "Berliner Mischung"*) later—can be functionally defined as a multi-story inner-city housing (tenement) and working estate with one or more commercial courtyards from the early days of industrialisation. The highly compact and dense block incorporates shops into the ground floor facing the street, housing on the floors

above and in the side wings, and diverse commercial activities (e.g., retail, crafts, light manufacturing) with storage, production, and workshop facilities in the back courtyards (Bascón-Borgelt et al., 1983; Baumgart, 2001; Bodmann & Rieger, 1988; Hausmann & Soltendiek, 1986; Hoffmann-Axthelm, 1984a, 1993). Although the Berlin Mix is often considered one specific type of inner-city mixed building block, there are various types depending on the construction date. Regarding its commercial and industrial structures (*Gewerbebauten*), four historic types—workshops, shed/depot factories, factory courtyards, and commercial courtyards—were differentiated until 1945 (Bodmann, 1984; Bodmann & Rieger, 1988; Hoffmann-Axthelm, 1984b). Since 1945, those have been built on the outskirts in different settings, such as commercial centres or park courtyards (Henckel, 1981; Hüttenhain, 2012; Suwala & Franke, 2025).

2.3. A "New Berlin Mix": Contemporary Ideas and Stylised Types

Nowadays, the fundamental commercial building block of mixed-use development in general (for London, see Ferm, 2016; for the German Ruhr Area, see Meyer & Schonlau, 2024) and the Berlin Mix in particular, is based on local economies that can encompass manifold economic activities, such as urban agriculture, urban production, and urban services (Henn et al., 2020)—in addition to activities of the solidarity-based economy, which is also referred to as the social economy, community economy, and grey/informal economy (Birkhölzer, 2000; Erbstößer, 2016). These local economies feed into the productive city, which should transform "central urban areas into attractive multifunctional spaces provid[ing] new opportunities for urban development through mixed use for living, working and recreation, where manufacturing, retail and services are found alongside housing, hospitality and leisure" (Bundesministerium des Innern, 2020, p. 5). In this realm, studies refer to the "Berlin Mix 2.0" (Erbstößer, 2016) or the "New Berlin Mix" (Saad, 2016; Stimmann, 1993), which involves a smart mix that enhances the quality of life for residents while promoting sustainable economic development. This mix requires specific (planning) tasks to be accomplished, such as densifying and verticalizing areas for urban production, creating incentives for micro-, small-, and medium-sized enterprises, promoting low-emission artisanal production, implementing production 4.0, and—if applicable—integrating urban agriculture into these areas. All these measures should ensure local supply and regional sourcing in innovation-friendly environments next to the diverse universe of services, such as retail activities, accommodation, tourism, and digital commerce (H. Brandt et al., 2018; Erbstößer, 2016; Läpple, 2016; Saad, 2016). It should be noted that "mixed-use development must be conceived beyond the coexistence of residential, office and retail in a 'latte macchiato city' " (Gärtner et al., 2021, p. 6). At the same time, and this is still true today, "It is evident in numerous places that it has not become simpler in recent years to implement the idealized small-scale mix of housing, commerce and trade" (see also zur Nedden et al., 2015, p. 16; Frerichs et al., 2018, p. 67). This confirms the initial findings of the *Experimenteller Wohnungs- und Städtebau* (Experimental Housing and Urban Development) research project Mixed Utilization in Urban Development carried out almost 20 years ago: "While there are mixed-use projects in many German cities, they are exceptions compared to purely commercial and residential areas" (Breuer et al., 2000, p. 9). In other words, even in mixed-use neighbourhoods, separation processes between commercial and residential areas are on the rise.

Although there are currently many novel ideas on how to label and (re-)establish this functional mix in commercial courtyards based on old and new built substance by combining or enlarging activities with start-ups, kindergartens, and cultural or creative economies (e.g., Suwala, Becker, et al., 2025; Suwala, Kitzmann, et al., 2025; Suwala et al., 2021), we follow the taxonomy developed by Hatuka and Ben-Joseph

(2017) in their writing about industrial urbanism to help us categorise commercial courtyards. They categorise urban commercial and industrial areas into four types, which apply to commercial courtyards in Berlin (GSG Berlin, 2025; in a broader sense, see also Figure 1). Our a priori typology is a deductive-inductive description that stems both from the taxonomy above (deductive) and from our experiences during the field work (inductive). Although this typology is not a desired planning objective for commercial courtyards, it might act as a template for strategic planning endeavours.

Figure 1. Four stylised types of commercial courtyards in Berlin.

Our first type is the Integrated Berlin Mix Courtyard (*Gewerbehof "Berliner Mischung"*), which closely resembles the stylised image of the historic Kreuzberg Mix, as described in Section 2.3. It incorporates multifunctional commercial uses and residential units at the block level, partly also at the building level, and sometimes even at the floor level. The second type is the Adjacent Courtyard (*Klassischer Gewerbehof*), which was built mostly from the 1900s to 1945s without residential functions and housing facing the street; this type does not include a mix at the block level but rather at the neighbourhood level. The third type is the Extended Berlin Mix Courtyard (*Gewerbehof, Altbau und Neubau*), which enlarges the initial type with structural extensions, leading to a horizontal and vertical densification on grounds that were either destroyed in World War II or demolished during the reconstruction in the 1960s and 70s. The Autonomous Courtyard (*Moderner Gewerbehof*) is more modern, built after the 1960s and in most cases even after the reunification (especially in former East Berlin), and is only located on the outskirts. It must be mentioned that the history and development of commercial courtyards are situational, path-dependent, contingent, location-specific, and therefore not necessarily transferable to other urban areas in Germany and beyond. Whereas the consulting company *Regioteam* applies a similar typology for Berlin (Argus, 2023), the Berlin Mix Courtyard and Adjacent Courtyard sub-types fall under the same umbrella in the Commercial Development Concept for Friedrichshain-Kreuzberg (*Gewerbeentwicklungskonzept*; Baba et al., 2017). This concept also adds single so-called interspersed locations (*eingestreute Gewerbehöfe*; Baba et al., 2017, p. 19), while Baumgart concludes with different types for Hamburg (Baumgart, 2001). In general, this typology can only be partly applied to other cities in Germany (Meyer & Schonlau, 2024; Suwala, Becker, et al., 2025) and beyond (e.g., for London, see Ferm, 2016; Ferm et al., 2021), while the Integrated Berlin Mix Courtyard and Extended Berlin Mix Courtyard are unique to the city of Berlin, which is why we kept the name "Berlin" in these types. The other denominations and names are derived from the typology of Hatuka and Ben-Joseph (2017).

2.4. Objectives, Main Criteria, and Research Questions

Our objective was to examine the relevance of the Berlin Mix today, focusing on its potential for functional mixed-use development in commercial courtyards, while considering the influence of new technologies, the rise of the productive city, and urban strategies that support integrated, sustainable, and mixed-use developments. We therefore address two key questions: How can a "New Berlin Mix" be defined? And what opportunities do specific types of commercial courtyards offer for achieving such a functional mix of uses? Grounded in the historical evolution of Berlin's mixed-use development and the concept of the productive city, this article develops a working definition of the "New Berlin Mix" in the aftermath of this analysis. The evaluation framework is based on three primary criteria derived from the nature of functional mixed-use development in general (see Section 2.1) and the Berlin Mix in particular (see Sections 2.2 and 2.3), with defined indicators that serve as a basis for the analysis, rather than an exhaustive list. The first criterion, "diversity of use," examines the range of different use categories within commercial courtyards, including residential, office, material production, retail, and social infrastructure (Bundesministerium des Innern, 2020; Rodenburg et al., 2003; Schwanke & Urban Land Institute, 1987). This criterion is assessed using indicators such as "number of use categories" and "sectoral diversity within these categories" at the block level. The second criterion, "integration of the productive economy," focuses on the presence of urban production activities, such as manufacturing, industry, and urban agriculture (Aring et al., 1995; Erbstößer, 2016; Gärtner & Meyer, 2023). Indicators for this criterion include "proportion of urban production" and "sectoral diversity of urban production" at the block level, reflecting the existence and variety of production activities. The third criterion, "vibrant and integrated urban spaces," evaluates the quality and connectivity of the courtyard environments (Häußermann & Kapphan, 2002; Hoppenbrouwer & Louw, 2005; Läpple, 2016). Indicators for this criterion include "proximity to social infrastructure and local amenities," "quality of transport connectivity," and "proximity to green spaces" at the neighbourhood level.

3. Analysis and Results

3.1. Methodology

To analyse the functional mixed-use development of the assumed "New Berlin Mix" in commercial courtyards, we considered a sample of 35 commercial courtyards from Berlin's largest private commercial property owner (GSG Berlin, which once belonged to the city of Berlin), offering a fairly representative cross-section of various courtyard typologies across the city. Methodologically, we applied a multi-method framework combining web and literature research (e.g., [historical] information and structural development and pertinent websites), full on-site inspections, and a quantitative and comprehensive inventory of all activities (commercial, social, and residential) with georeferenced GIS analyses (Heinrich et al., 2024; Kuckartz, 2014). We investigated the functional mixed-use development using an indicator-driven sample of 35 commercial courtyards based on (a) the company's website, (b) on-site visits, (c) GIS-based analyses, (d) a comprehensive inventory and survey of all (commercial) activities, and (e) expert interviews in the first half of 2024. Each commercial courtyard and its surroundings were analysed individually to evaluate the aforementioned indicators and to allow for a differentiated and comparable assessment.

In a first step, the 35 commercial courtyards were categorised into the four a priori functional types according to their building structure (see Section 2.3). In a second step, an indicator-based analysis was

conducted, where each commercial courtyard was systematically assessed using an inventory documenting identifiable tenants, functional uses, and industry sectors. The inventory was compiled through on-site inspections and verifications, data from digital mapping applications, and publicly accessible information from the commercial courtyard owner, including commercial courtyard sizes and vacant spaces. The overall evaluation applied the three key criteria—"diversity of use," "integration of the productive economy," and "vibrant and integrated urban spaces"—derived from the theory. This included the aforementioned sub-indicators, operationalised within a structured framework and rated on a scale from 1 (*very low*) to 6 (*very high*) to ensure comparability and consistency. The results were compiled in an Excel database and georeferenced using GIS. This allowed for a spatial visualisation of the findings (see Figures 2, 3, 5, 7, and 9), providing a comprehensive overview of the indicator-based analysis results within the stylised types and sub-types of commercial courtyards. For the final assessment, the ratings (in points) for the three criteria were weighted equally and added up using average values (also incorporating all sub-indicators), allowing for a range between 0 and 18 points (see Table 1). The last step comprised five interviews with experts from the Berlin administration (planning), the economic promotion department of a Berlin district (policy), a Berlin-owned company that runs such courtyards (administration), a medium-sized company (economy), and a pertinent real-estate developer that constructs such courtyards (economy) which evaluated our categorisations ex post. All interviews were conducted via a video conference provider or on the phone and lasted 30 to 45 minutes.

3.2. Types, Locations, Sizes, and Vacancies of Commercial Courtyards in Berlin

GSG Berlin is one of Berlin's largest property owners, managing 35 commercial courtyards. These courtyards offer rental spaces ranging from 20 to 20,000 square meters, catering to small and medium-sized businesses across various sectors (GSG Berlin, 2024). Figures 2 and 3 provide an overview of the spatial distribution of these commercial courtyards across Berlin's districts. Based on structural characteristics, we categorised the investigated commercial courtyards into four types: Integrated Berlin Mix Courtyard, Adjacent Courtyard, Autonomous Courtyard, and Extended Berlin Mix Courtyard (see Section 2.3 and Figure 1). This typology of commercial courtyards is based on three spatial prototypes of industrial spaces, described by Hatuka and Ben-Joseph (2017), which were derived from the Commercial Development Concept for Friedrichshain-Kreuzberg (Baba et al., 2017) and influenced by an empirical study on commercial courtyards (Argus, 2023). This typology was further refined based on the findings from our own investigations and expert interviews.

Figures 2 and 3 also show spatio-structural patterns regarding both the differentiation of the deductive courtyard types and their respective locations. Of the 35 courtyards, six can be classified as Integrated Berlin Mix Courtyards, all of which are located in the district of (Friedrichshain-)Kreuzberg. Most of the courtyards, 14 of the 35 properties, are categorised as Adjacent Courtyards. These properties are located primarily in inner-city areas with a few exceptions in more peripheral districts such as Reinickendorf (northwest Berlin). The six courtyards identified as Autonomous Courtyards are predominantly situated in the city's outskirts, with one exception in Charlottenburg (central-west Berlin). The nine Extended Berlin Mix Courtyards generally feature new buildings added to existing structures and originated either from Integrated Berlin Mix or Adjacent Courtyards. Consequently, they are located in inner-city areas. Some of these courtyards were already extended between the 1970s and 1990s, such as the Prinzessinnen-Höfe and the GSG-Hof Reuchlinstraße courtyards. Over the last few years, modern office buildings have been

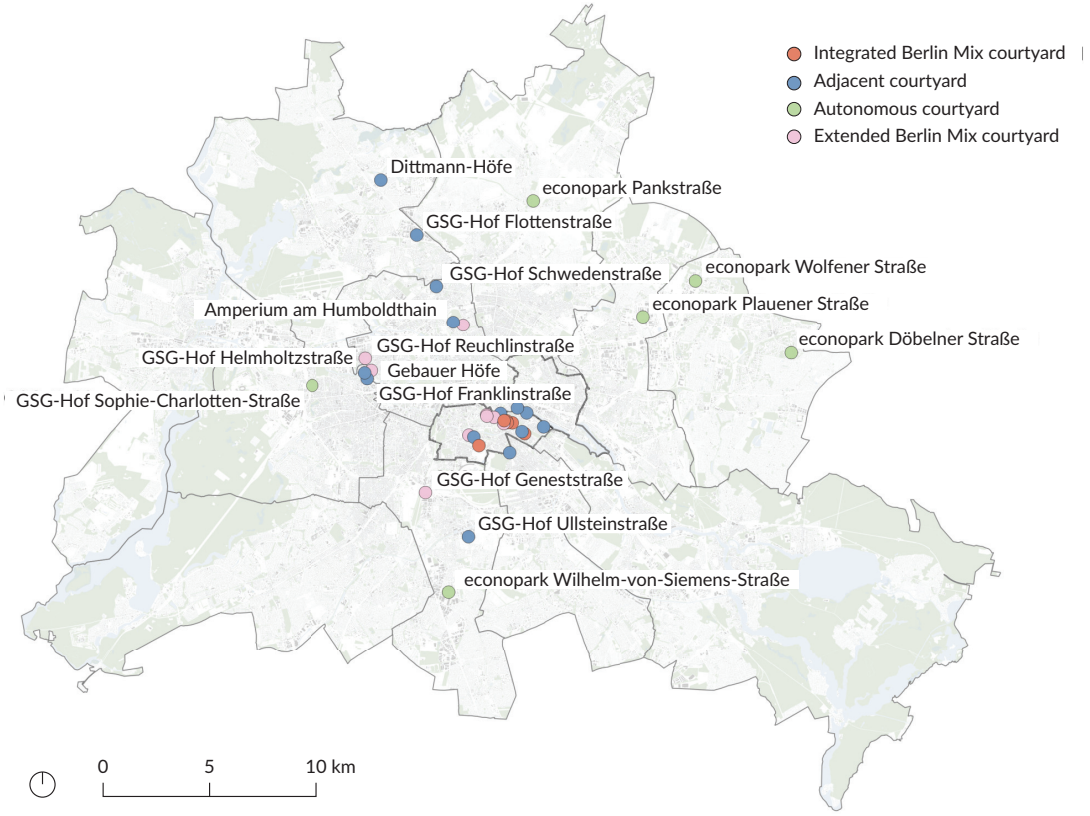

Figure 2. Location and typology of GSG commercial courtyards in Berlin.

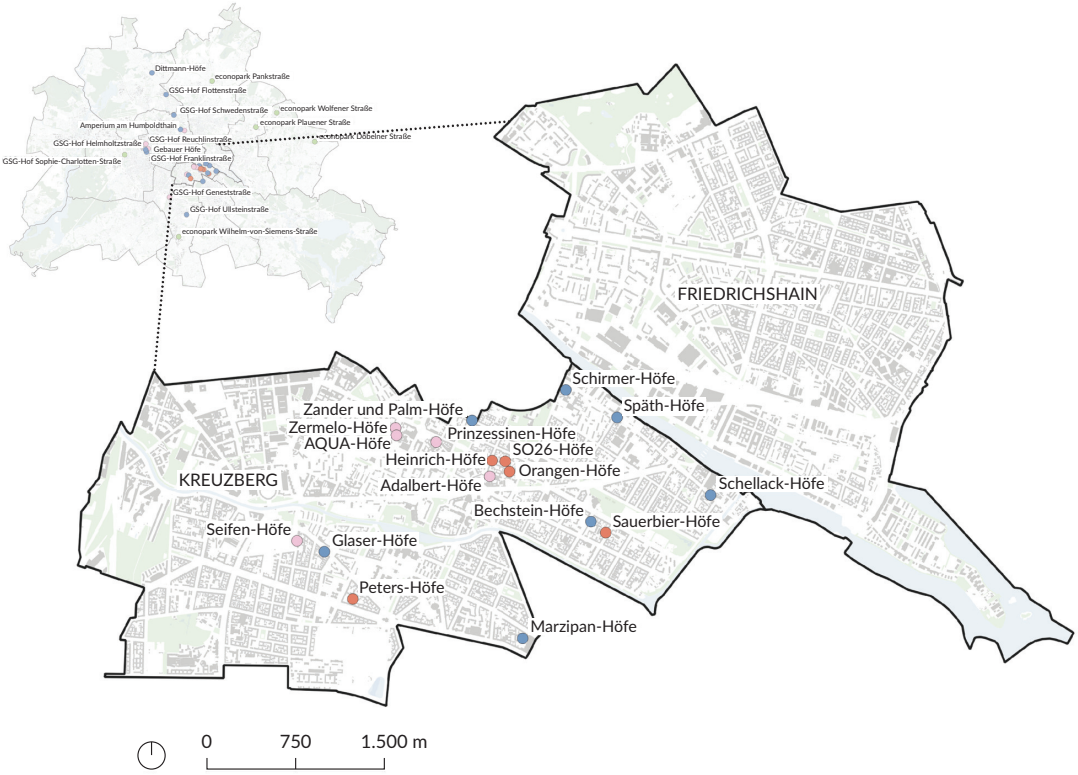

Figure 3. Location and typology of GSG commercial courtyards in (Friedrichshain-)Kreuzberg.

integrated into others, such as the Seifen-Höfe, Gebauer-Höfe, and Aqua-Höfe courtyards, with ongoing developments, including large-scale office spaces and commercial facilities. For example, the Seifen-Höfe courtyards are currently being expanded to include an office building of approximately 11,000 square meters (see also Figure 1). These extended courtyards blend historic structures with modern developments, often incorporating extra storeys and diverse commercial facilities. While these courtyards still include a rather diverse range of commercial uses, recent developments and planned projects are increasingly dominated by office spaces (own observation and location profiles).

As illustrated in Figure 4, courtyards vary significantly in average size and vacancy areas—and accompanying vacancy rates across the different typologies. The Integrated Berlin Mix Courtyards, characterised by the smallest size of 4,800 m² and 13 tenants on average, also show minimal vacancies (1.4 %). These low vacancy rates can be explained by various factors. In general, this type is now under pressure to be converted into residential or office spaces. They are very popular among capital-intensive start-ups and knowledge-oriented labs backed by larger corporations, which employ a highly skilled and often international amenity-loving creative class (Interviews 4 and 5; see also Gergs et al., 2025; Pettas & Suwala, 2023). At the same time, existing tenants with old contracts try to persist despite commercial lease laws that generally do not favour stable long-term contracts (Suwala & Franke, 2025). Therefore, it is up to the landlords, be they private or public, to decide which strategy to pursue (Interviews 1, 2, and 3). The Adjacent and Expanded Berlin Mix Courtyards exhibit comparatively medium in size, averaging approximately 25,000 m² (25 tenants) and 22,000 m² (23 tenants), but they differ in terms of vacancies. The vacancy rate in Expanded Berlin Mix Courtyards (21.4 %), however, is notably higher, almost three times the rate found in Adjacent Courtyards (8.4 %). This high vacancy rate in Expanded Berlin Mix Courtyards can be attributed to the fact that some of the new spaces have not yet been let or are too expensive, or it reflects the current oversupply of office spaces (Interviews 1, 2, and 4). In contrast, Autonomous Courtyards are the largest type on average at roughly 48,000 m² (40 tenants) and a very modest vacancy rate (3.3 %). At first sight, the average number of tenants correlates with the average size of the commercial courtyard type for all types.

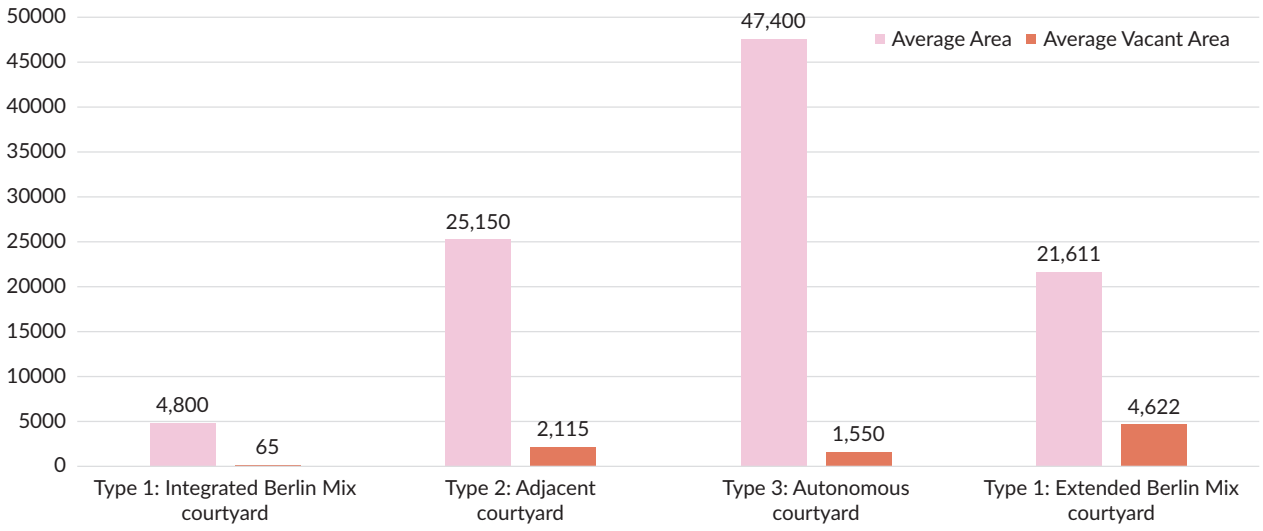

Figure 4. Total average area (in m^2, pink bars), and average vacant area (in m^2, red bars) of commercial courtyard types. Figure created by authors based on calculations and location profiles.

However, if we deduct the average vacancy rates, we obtain the following average floor space occupancy by commercial courtyard type: The Integrated Berlin Mix Courtyard has the smallest floor space occupancy per company (365 m^2), followed by the Extended Berlin Mix Courtyard (740 m^2), the Adjacent Courtyard (950 m^2), and the Autonomous Courtyard (1,150 m^2). In other words, the inner-city courtyards are home to the smallest companies (in terms of floor space) but are still relatively large on average. Extended Berlin Mix Courtyards are accelerating this trend. Therefore, it can be said that the target group is no longer comprised of either micro or craft enterprises (Interviews 1 and 2). The Adjacent Courtyards have a relatively high floor space occupancy per company. This can be explained by the higher shares of space-intensive material production combined with a low diversity of use—in other words, they house larger local companies (no information on company employees was available). Autonomous Courtyards have the highest average floor space occupancy per company. However, given the proportionality in terms of average size, it can be assumed that this type features a richer mix of small, medium, and large tenants; this was confirmed by the material and the interviews (Interviews 2 and 4).

3.3. Functional Mixed-Use Development in Commercial Courtyards of Berlin

3.3.1. "Diversity of Use" in Commercial Courtyards

The criterion "diversity of use" evaluates the variety and range of different functional use categories within a commercial courtyard, reflecting the extent to which these spaces support a range of activities. This is measured using two sub-indicators: "number of use categories" and "diversity of sectors within those categories." The indicators were analysed based on the inventory compiled for each individual commercial courtyard. For the analysis, seven primary use-categories were considered: office, material production, retail, gastronomy, social infrastructure, residential, and other commercial uses. Within each of these categories, various industry sectors were identified. The categorisation has been designed to be straightforward, even if several fields of activity were conceivable, and is not based on the official classification of economic activities (e.g., WZ 2008 or NACE Rev. 2) but was carried out based on how the companies and institutions portrayed themselves. The "office" category, for example, includes a variety of (intangible) services from different sectors, such as media, engineering and architecture, finance, research and development, and IT and software, while "material production" includes tangible industries such as furniture and wood processing, light industry, textile manufacturing, and 3D printing (for similar official classifications, see Meyer & Schonlau, 2024). The criterion "diversity of use" was evaluated using a comparative analysis of the investigated commercial courtyards. Commercial courtyards accommodating five or more use categories were considered to have a heterogeneous structure, receiving high ratings for use diversity, while commercial courtyards with fewer than three use categories were regarded as homogeneous and obtained low ratings (Figure 5).

The results of the indicator analysis for the criterion "diversity of use" demonstrate considerable variations depending on the type and location of the commercial courtyards. Interestingly, Autonomous Courtyards typically show a higher diversity of use compared to the other courtyard typologies, especially those situated outside inner-city areas. That is surprising, as one would expect Berlin Mix Courtyards to have the highest values. A possible explanation could be that commercial activities that could not find spaces elsewhere or were displaced from inner-city estates by commercial gentrification and/or industrial displacement were thrown together, and because in rather peripheral, large, and younger Autonomous Courtyards, many available spaces in the past were just filled up. As a result, no specific profile emerged (Interview 4).

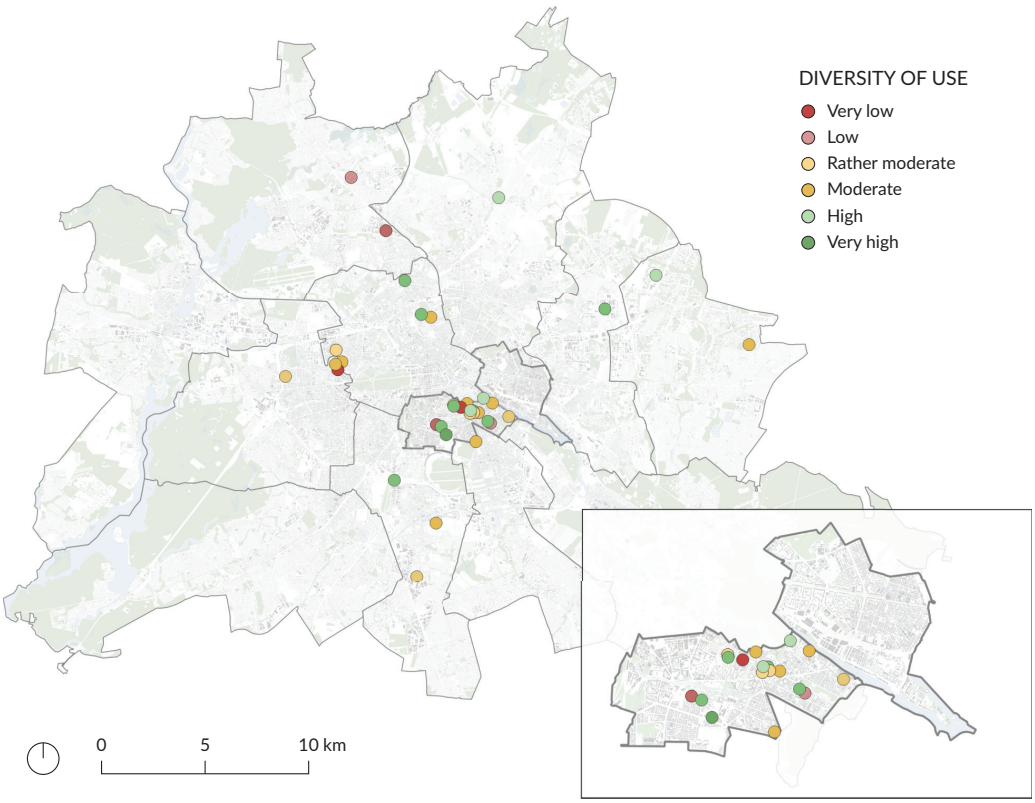

Figure 5. Diversity of use within commercial courtyards.

Notwithstanding, commercial courtyards located in the inner-city district of (Friedrichshain-)Kreuzberg (Figure 3), also dubbed the cradle of Berlin craftsmanship (mostly Berlin Mix and Adjacent Courtyards), tend to show a higher diversity of use than their counterparts in periphery districts and locations. For example, the GSG-Hof Flottenstraße and Dittmann-Höfe Adjacent Courtyards located in Reinickendorf display a notably lower diversity of use. These commercial courtyards tend to integrate fewer sectors but can be considered as established locations in former West Berlin with a more specialised focus, resulting in a low diversity rating (Interview 1). Although other commercial courtyards located in inner-city districts exhibit moderate to high levels of use diversity in general, there are exceptions to this trend. The Seifen-Höfe courtyards (see Figures 1 and 3) and Prinzessinnen-Höfe courtyards (Figure 3), both of which are classified as Extended Berlin Mix Courtyards, show a predominance of offices and other business sectors. In particular, the Prinzessinnen-Höfe courtyards are largely dominated by tenants from the IT, software, and consulting sectors, while the Seifen-Höfe courtyards primarily host businesses in the engineering and architecture fields. The following explanation can be provided: Their location profile(s) have developed organically (e.g., location cooperatives and cluster formation) or have been actively promoted by the owners. Rising (rent) prices are increasingly pushing manufacturing, craft, and cultural businesses out in favour of pure office spaces in these locations. (International) start-ups and high-tech companies are able to pay those rents and like to stay close to highly-skilled workers (Interviews 3 and 5). This is also demonstrated by the fact that the company names at Prinzessinnen-Höfe are predominantly in English.

As illustrated in Figure 6, the number of tenants (over 900 were identified in all courtyards) within the various use categories varies significantly depending on the type of commercial courtyard. In all courtyard types, except the Integrated Berlin Mix Courtyards, where the “residential” category is exclusively present

and exhibits the highest share of tenants, the office function dominates (as measured in number of tenants). The extent of domination is mostly pronounced in Adjacent and Extended Berlin Mix Courtyards, where almost 60% of the tenants surveyed fall into the "office" category. In the Autonomous Courtyards, the "material production" use category is almost as evenly distributed as the "office" category, with both accounting for roughly 30% of tenants. Overall, Autonomous Courtyards are characterised by a greater number of different use categories, which accounts for the generally higher diversity of use in these spaces. The "gastronomy" and "social infrastructure" categories, however, are underrepresented across all types of commercial courtyards, contributing marginally to overall use diversity.

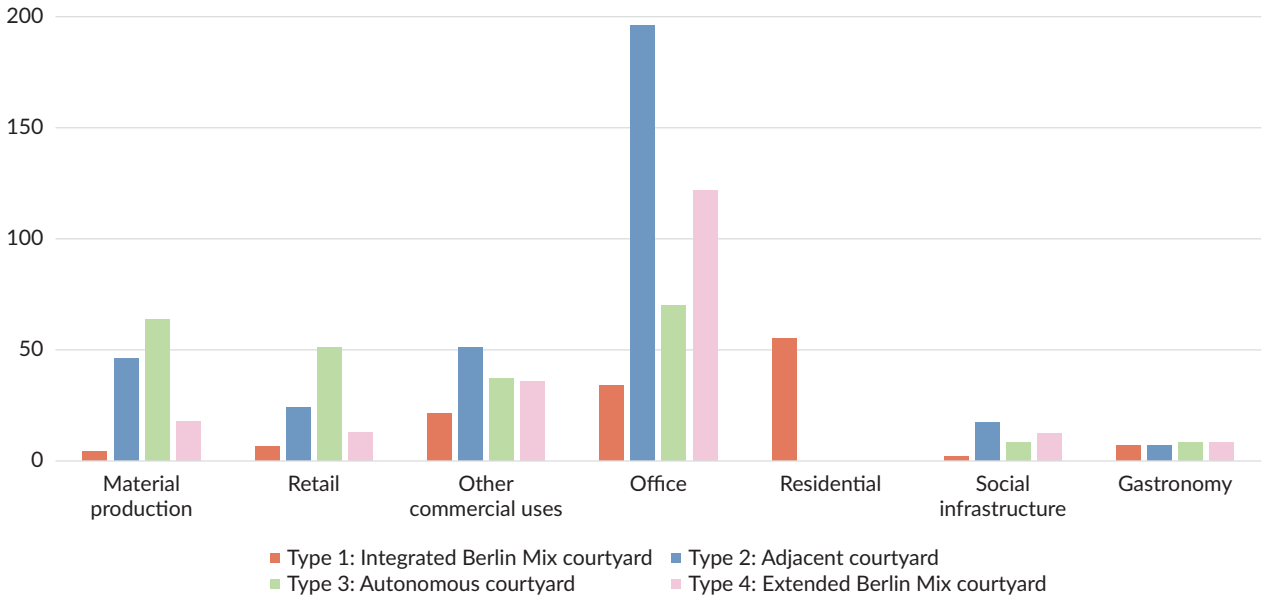

Figure 6. Distribution of use categories within types of commercial courtyards, in number of tenants, $n = 919$.

3.3.2. "Integration of the Productive Economy" in Commercial Courtyards

The criterion "integration of the productive economy" evaluates the presence of urban production/ industries within the different commercial courtyards. To measure the criterion, two sub-indicators were selected: "proportion of urban production" and "sectoral diversity within urban production." These indicators were also analysed based on the inventory compiled for each individual commercial courtyard. The proportion of urban production shows the number of tenants from the "material production" use category in relation to the total use categories (see Figure 8). Additionally, the presence of different production industries—such as crafts, workshops, light industry, pharmaceuticals, metal/woodworking, printing, car repair, and 3D/robotics, which can be subsumed under the label "urban manufacturing" or "urban industry"—is examined to evaluate the sectoral diversity within material production. The results of the indicator analysis reveal a correlation between the integration of productive industries and the location of commercial courtyards. Specifically, commercial courtyards located on the outskirts exhibit high to very high levels of integration (see Figure 7). These areas predominantly consist of both Autonomous Courtyards and Adjacent Courtyards, which accommodate both a high proportion and high sectoral diversity of urban production. For example, the econopark Plauener Straße Autonomous Courtyard in Lichtenberg (see Figures 1 and 2) receives a very high overall rating. A total of 30% of its tenants belong to the "material production" category, and the courtyard shows strong sectoral diversity within urban production. It hosts both urban manufacturing activities, such as

furniture workshops, textile processing companies, and printing presses, and urban industries involved in 3D printing and the production of light industrial products. In other autonomous econopark courtyards (Döbelnerstraße, Wolfenerstraße, Pankstraße, Wilhelm-von-Siemens-Straße), similar proportions (around 30%) and diversities (e.g., crafts, printing, textiles, light industry, and sometimes pharmaceuticals and food processing) can be observed.

In contrast, commercial courtyards in the district of (Friedrichshain-)Kreuzberg show very low levels of integration of the productive economy. Of the 18 courtyards in this district, six do not feature any form of urban production, while there was only one remaining business left in the others, which clearly cannot account for sectoral diversity. This trend is observed in both Integrated Berlin Mix Courtyards and Extended Berlin Mix Courtyards. Within the Extended Berlin Mix Courtyards, urban production is integrated to highly varying degrees. While 30% of tenants deal with material production in a large variety of sectors (light industry, pharmaceuticals, crafts, metal) in GSG-Hof-Reuchlinstraße, four out of nine commercial courtyards in this group do not host any urban production activities. In the districts of Mitte, Charlottenburg-Wilmersdorf, and Tempelhof-Schöneberg, the integration of production industries varies, with no clear pattern.

A much higher baseline of integration of the productive economy can be observed in Adjacent Courtyards, albeit also with significant variation. The GSG-Hof Flottenstrasse (67%) and Dittmann-Höfe (44%) courtyards, for instance, demonstrate a relatively high "proportion of urban production" and sectoral diversity (e.g., wood/metal, crafts, printing, car repair), whereas the GSG-Hof Franklinstraße courtyard does not engage in urban production at all. Only very few (Adjacent) Courtyards, such as Amperium am

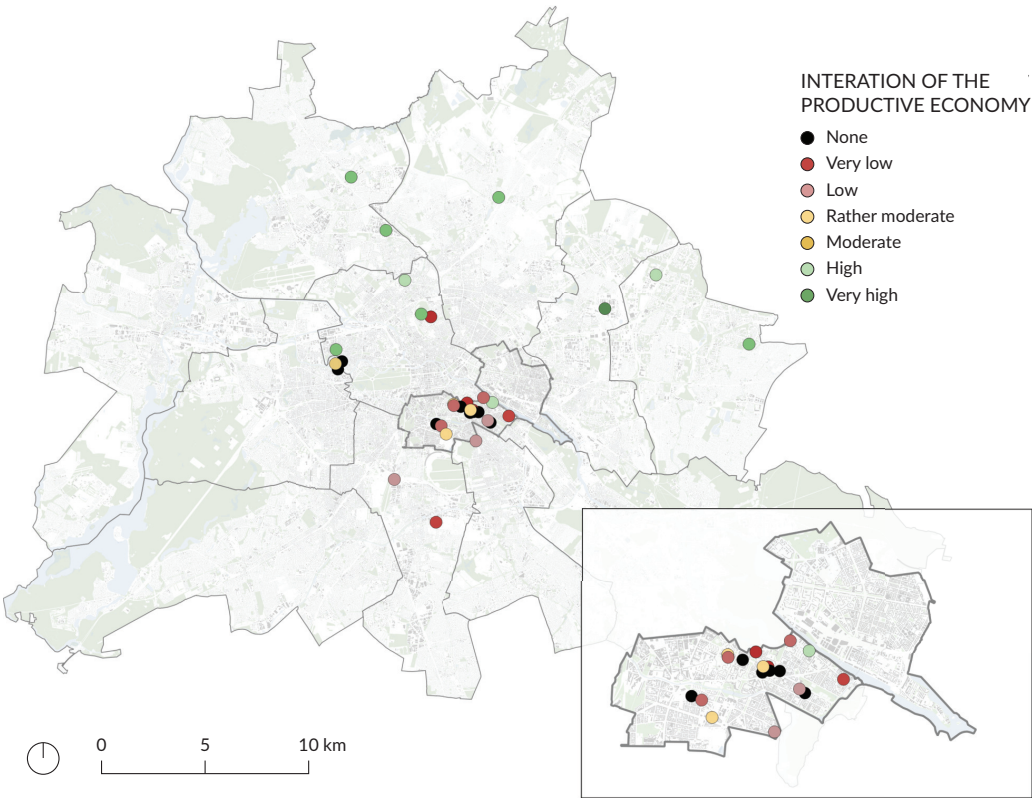

Figure 7. Integration of the productive economy in commercial courtyards.

Humboldthain, host the theoretically desired material production, such as 3D printing and robotics (see Erbstößer, 2016).

By taking a closer look at the average number of tenants, the average number number of tenants in urban production and type of commercial courtyards (see Figure 8), we can draw the following conclusion: The Integrated Berlin Mix Courtyards represent the typology with the lowest proportion of tenants in urban production (as measured by the ratio of the average number of tenants and the average number of tenants in urban production), comprising only 0.7 out of 13 tenants on average or 5% of total tenants (residential use excluded), followed by the Extended Berlin Mix Courtyards with only 1.6 out of 13 tenants on average (7%), Adjacent Courtyards with 4 out of 25 tenants on average (16%), and Autonomous Courtyards with 12 out of 40 tenants on average (31%). This distribution highlights the differences in the integration of productive industries based on the type and location of the commercial courtyards. Autonomous Courtyards tend to accommodate a more substantial proportion of tenants in urban production, whereas Adjacent Courtyards and those Courtyards in central urban districts show a much more limited proportion of urban production. It can be said that "urban production" plays almost no role in both the Integrated Berlin Mix Courtyards and in the novel Extended Berlin Mix type. This can be explained by the competition with residential uses, noise disturbance, and the strategic realignment of structural extensions, combined with higher rent prices (Interview 1).

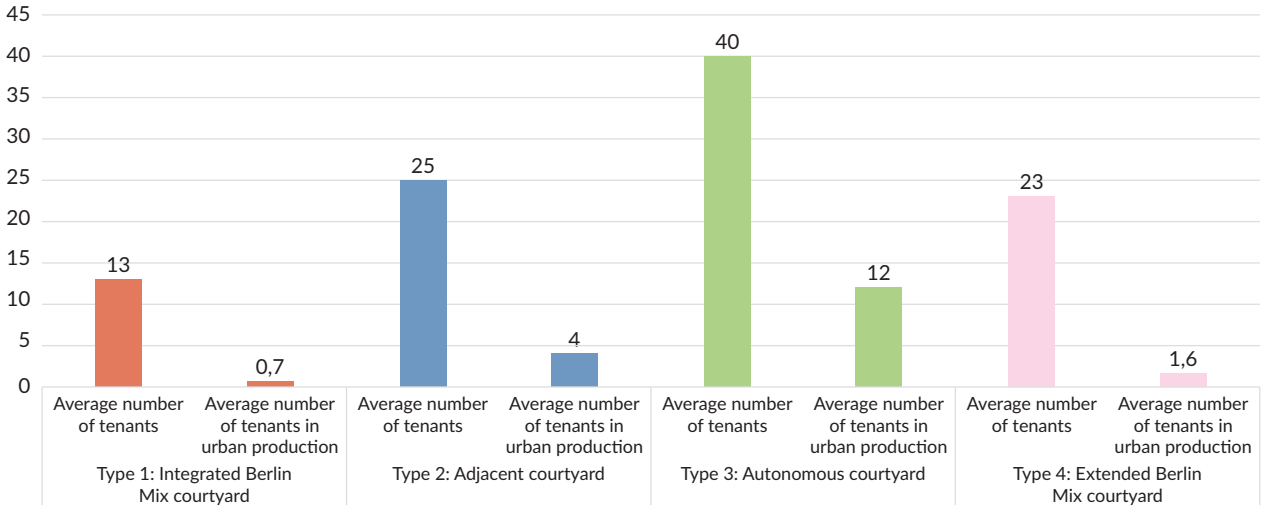

Figure 8. Average number of tenants and average number of tenants in urban production within different types commercial courtyards.

3.3.3. "Vibrant and Integrated Urban Spaces" in Commercial Courtyards

The third criterion, "vibrant and integrated urban spaces," evaluates the quality and connectivity of the courtyard environments (Häußermann & Kapphan, 2002; Läpple, 2016). Sub-indicators for this criterion include "proximity to social infrastructure and local amenities," "quality of transport connectivity," and "proximity to green spaces" at the neighbourhood level. In this case, neighbourhood level is the equivalent of a one-kilometre radius around each commercial courtyard. This radius, approximately a 15-minute walking distance, serves as a parameter for pedestrian accessibility (Bartzokas-Tsiompras & Bakogiannis, 2023). The criterion evaluates the extent to which commercial courtyards are embedded within a well-connected

urban fabric that offers a variety of amenities and infrastructures. This integration is considered essential for enhancing the overall quality of life for both residents and employees.

The analysis revealed significant spatial disparities between different courtyard typologies and locations within Berlin. In the inner-city district of (Friedrichshain)-Kreuzberg, commercial courtyards predominantly achieved high to very high ratings for the "vibrant and integrated urban spaces" criterion (see Figure 9). This outcome is primarily due to the district's well-established mixed-use urban environment, which features a dense concentration of amenities, social infrastructure, and robust transportation networks. Notably, commercial courtyards located along Oranienstraße and near Kottbusser Tor benefit from dynamic surroundings. These areas offer access to multiple subway lines, main roads, and a wide range of amenities. Most of these courtyards belong to the Berlin Mix type. In contrast, Adjacent Courtyards in (Friedrichshain-) Kreuzberg are located in peripheral areas of the districts and exhibit only moderate to high ratings for this criterion, with variations primarily influenced by their immediate surroundings. For example, the Späth-Höfe and Schirmer Höfe courtyards are situated in predominantly commercial neighbourhoods that offer fewer amenities. While their central locations within the inner city contribute positively to transportation connectivity, these courtyards score lower on the indicator for "proximity to green spaces." This shortfall reflects the limited availability of accessible parks or recreational areas.

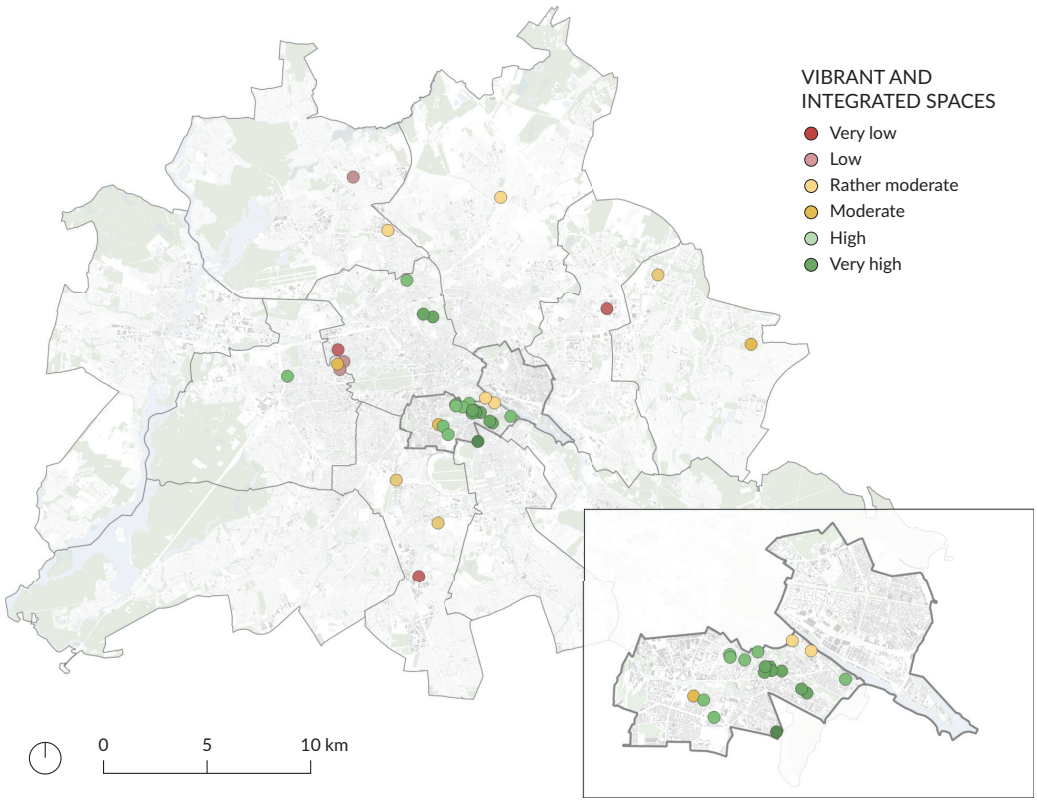

Figure 9. Vibrant and integrated urban spaces in commercial courtyards.

In peripheral districts, particularly in Berlin's northeast and southern outskirts, Autonomous Courtyards tend to receive moderate to low ratings for this criterion (see Figure 9). These courtyards are often poorly integrated into the broader urban structure, with limited access to essential social infrastructure and local

amenities. Additionally, many of these areas lack proximity to green spaces. However, exceptions exist within this typology. For instance, the GSG-Hof Sophie-Charlotten-Straße courtyard is located in a vibrant neighbourhood in the district of Charlottenburg. This Autonomous Courtyard was built on the abandoned estate of a local brewery in the late 1980s and benefits from strong transportation connectivity and a well-integrated neighbourhood characterised by diverse local services and social infrastructure. Its proximity to prominent green spaces, such as Lietzenseepark and Charlottenburg Palace Park, further enhances its overall rating.

Extended Berlin Mix courtyards present mixed results, reflecting variations based on their geographic location and surrounding infrastructure. In (Friedrichshain)-Kreuzberg, these courtyards benefit significantly from the district's diverse urban structure and robust transportation networks, achieving relatively high ratings. By comparison, courtyards such as the Gebauer-Höfe and GSG-Hof Reuchlinstraße achieve lower ratings. Positioned on the borders of the districts Mitte and Charlottenburg-Wilmersdorf, these courtyards are far away from public transportation networks and lack local ties. Despite their central geographic positions within the city, their integration into the surrounding urban fabric remains limited, contributing to lower overall ratings. It is worth pointing out that these courtyards are a remnant of extensive inner-city industrial areas along the sites of large companies such as Siemens or AEG, where transport was handled via waterways in the early days of industrialisation (these transport routes no longer play a role for handling cargo from and to courtyards today and were therefore not accounted for in the connectivity evaluation), which explains their locations along the Spree river being in inner-city locations yet peripheral.

In summary, commercial courtyards situated within centrally located, mixed-use districts—most notably (Friedrichshain)-Kreuzberg—achieve higher ratings for the criterion "vibrant and integrated urban spaces." This is largely due to their advantageous proximity to diverse amenities, robust transportation infrastructure, and accessible recreational spaces. In contrast, commercial courtyards located in more peripheral areas, particularly Autonomous Courtyards, generally lack these attributes and also have worse transport connectivity, leading to comparatively lower scores. These scores reflect limited integration into the surrounding urban structure, insufficient access to social infrastructure, and a lack of recreational spaces.

3.4. Overall Evaluation and Discussion

To obtain a larger picture and answer our first research question (How can a "New Berlin Mix" be defined?), we conducted an overall evaluation (see Table 1) and formed three main groups: top performers (Group 1), medium performers (Group 2), and low performers (Group 3), as well as specific subgroups categorised based on their structural types and location.

In general, it can be said that a stylised "New Berlin Mix" Courtyard can be characterised as follows:

- Mixed uses: at least five out of seven use categories integrated and an additional residential function within the block for the Integrated (and Extended) Berlin Mix type;
- Proportion of urban production: at least 10% for the Integrated (and Extended) Berlin Mix type, and at least 20–30% for the Adjacent and Autonomous types;
- Sectoral diversity within urban production: crafts and workshops, including light industry, pharmaceuticals, crafts, metal/woodworking, printing, car repair, and, to a limited extent, 3D/robotics;

- Embedded in a vibrant and mixed environment: courtyards located in mixed neighbourhoods, surrounded by a residential environment with numerous local amenities and social infrastructure.

If we look at the group of top performers, we have two Integrated Berlin Mix Courtyards (1a) that merely align with the "New Berlin Mix" as they score highly in the "variety of use categories" and "embeddedness in the environment" and moderately when it comes to "integration of the productive economy," which they managed despite residential functions on the same block. A second subgroup of top performers consists of Adjacent Courtyards (1b) that score highly in all categories, two of these Adjacent Courtyards also integrate novel and desired industry 4.0 applications such as 3D printing (Amperium am Humboldthain, GSG-Hof Schwedenstraße), but without a residential function. The third subgroup of top performers includes Autonomous Courtyards on the outskirts (1c) that score highly for the criteria "variety of use categories" and "integration of the productive economy," but there is room for improvement with regard to their local embeddedness. It is surprising that this type appears in the top-performing group despite its location and building structure. According to interviews, the econopark courtyards provide lower rent prices, flexible sectioning, and good standards in modern buildings and often function as a catchment area for displaced inner-city craftspeople and producers, as landlords have not set up specific branches or location profiles (Interviews 3, 4, and 5; Suwala, 2024).

The medium-performing courtyards include four subgroups: Integrated Berlin Mix Courtyards (2a) have the same characteristics as 1a, but with low scores for urban production. The Adjacent Courtyard subgroup (2b) differs from 1b in that they received low scores in "integration of the productive economy." Although the 2c subgroup includes diverse structural types (Adjacent, Autonomous, Extended Berlin Mix) and locations within Berlin, all of these courtyards received high scores in terms of integrating the productive economy and average scores in category uses and embeddedness. It mostly consists of well-established locations with a specific industry profile in West Berlin (Interview 1). The 2d subgroup consists of Extended Berlin Mix Courtyards that align with the characteristics of types 2a and 2b, but with low performance in terms of integrating the productive economy.

The entire low-performing group (3) shares a complete lack of urban production. While both subgroups are well embedded in their surroundings, subgroup 3a has average and subgroup 3b low values in diversity of use. The GSG-Hof Franklinstraße courtyard (3c) performs poorly in all three categories.

Our results can be summarised in the following threads. The "New Berlin Mix" is a modified type of mixed-use development that differs from the "original amd historical" Berlin Mix in the functional composition: It does not necessarily belong to the Integrated Berlin Mix Courtyard type nor is it located exclusively in inner-city locations. Besides, we see a much lower or even no proportion of urban production in many courtyards. Furthermore, the envisioned and desired mixed-use development with progressive low-emission technologies (e.g., 3D printing, robotics; Erbstößer, 2016) is still in its infancy. Moreover, it would be exaggerated to romanticise the original or Integrated Berlin Mix as this was also a non-altruistic community of purpose that evolved from past structural, social, economic, and demographic constraints (Hoffmann-Axthelm, 1993). Therefore, the functional mixed-use development integrating local economies and urban production (Bundesministerium des Innern, 2020) is and will continue to be a Herculean task for planning in future, including from an economic perspective.

Table 1. Overall assessment for the "New Berlin Mix."

Group	Name of Courtyard	Type	Location
(1) Top performers (> 12 out of 18 points)	(1a) Peters-Höfe, Heinrich-Höfe	Integrated Berlin Mix	Inner city
	(1b) Amperium am Humboldthain, GSG-Hof Schwedenstraße, Marzipan-Höfe, Bechstein-Höfe	Adjacent	Inner city
	(1c) econopark Plauener Straße, econopark Döbelner Straße, GSG-Hof Sophie-Charlotten-Straße, econopark Wolfener Straße, econopark Pankstraße	Autonomous	Outskirts (exception: Sophie-Charlotten-Straße)
(2) Medium performers (9 ≤ x < 12 out of 18 points)	(2a) SO26-Höfe, Zuse-Höfe	Integrated Berlin Mix	Inner city
	(2b) Glaser-Höfe, Zander und Palm-Höfe, Schellack-Höfe, Schirmer-Höfe, GSG-Hof Ullsteinstraße	Adjacent	Inner city
	(2c) Späth-Höfe, GSG-Hof Helmholtzstraße, Dittmann-Höfe, GSG-Hof Flottenstraße, econopark Wilhelm-von-Siemens-Straße, GSG-Hof Reuchlinstraße	Adjacent, Autonomous, Extended Berlin Mix	Inner city and outskirts
	(2d) AQUA-Höfe, Zermelo-Höfe GSG-Hof Wattstraße, GSG-Hof Geneststraße	Extended Berlin Mix	Inner city
(3) Low performers (< 9 out of 18 points)	(3a) Orangen-Höfe, Adalbert-Höfe, Gebauer Höfe	Integrated and Extended Berlin Mix	Inner city
	(3b) Prinzessinnen-Höfe, Seifen-Höfe, Sauerbier-Höfe	Integrated and Extended Berlin Mix	Inner city
	(3c) GSG-Hof Franklinstraße*	Adjacent	Inner city

Notes: Although the overall rating allowed for a range of 0 to 18 points (see also Section 3.1), roughly half of the courtyards scored between 9 and 12 points (which we consider medium performance), while the total average was 10.67 points; therefore, we obtained a slightly shifted Gaussian distribution to the right and pragmatically set the point ranges for top performers (> 12 out of 18 points) and low performers (< 9 out of 18 points); * GSG-Hof Franklinstraße cannot really be included in the analysis as it served as the headquarters of the GSG between 1975 and 2016 with administrative functions.

With regard to the location, the following can be said: Even if we have not considered the courtyards in a dynamic longitudinal perspective, we assume that residential gentrification and its spatial spiral patterns in Berlin, as modelled by Döring and Ulbricht (2018) and Holm (2014), have also been taking their toll on commercial activities in courtyards. Heider and Siedentop (2024) differentiate between two types of economic gentrification (see also Ferm, 2016; Glatter & Sturm, 2020; Ryckewaert et al., 2021), which are quite useful for explaining our overall assessment in Table 1. First, industrial displacement describes the replacement of manufacturing activities by more profitable uses such as housing or higher-value services. This process results in de-mixing and is particularly prevalent in Integrated Berlin Mix Courtyards, which have lost or are losing their production base, but also in Adjacent Courtyards in inner-city locations to a more limited extent. Second, commercial gentrification represents the successive displacement of traditional businesses (for example, in retail, gastronomy, or crafts) by property upgrading processes in changing neighbourhoods. This happens in Integrated Berlin Mix Courtyards and in Extended Berlin Mix Courtyards to

a large extent. By and large, two results of our analysis can be confirmed. First, the "New Berlin Mix" is no longer restricted to inner-city locations due to the lack of urban production. Second, displaced businesses have clearly moved to Autonomous Courtyard locations on the outskirts, which act as a catchment area with available spaces, a high variety of industries, and lower rents (see also Suwala, 2024).

4. Conclusion and Outlook

We have investigated functional mixed-use development in Berlin within a sample of 35 commercial courtyards based on the GSG company's website, on-site visits, georeferencing and GIS analysis, and a comprehensive inventory and survey of all (commercial) activities, as well as ex-post interviews. Our objective was to assess which characteristics a potential "New Berlin Mix" would include. Our results show that the "New Berlin Mix" aims to integrate a diverse range of use categories, including residential use, the productive economy, and a vibrant environment with local amenities and social infrastructure. Interestingly, this "New Berlin Mix" can also be found in Adjacent and even Autonomous Courtyards on the outskirts, while mixed-use developments seem to be losing ground in inner-city tenement housing quarters (i.e., Integrated Berlin Mix or Extended Berlin Mix Courtyards). A reason for this spatial movement towards the periphery could be industrial displacement and commercial gentrification (Ferm, 2016; Heider & Siedentop, 2024). Meanwhile, envisioned and desired mixed-use developments with progressive low-emission technologies (e.g., 3D printing, robotics; Erbstößer, 2016; Läpple, 2016) are still rare.

On the one hand, our study contributed to the literature on the economic nature of mixed-use development (Hoppenbrouwer & Louw, 2005; Rowley, 1996), urban production (M. Brandt et al., 2017; Grodach & Martin, 2021; Herrmann et al., 2020), commercial courtyards (Baumgart, 2001; Bodmann, 1984; Henckel, 1981), and to the very few studies about urban economic gentrification (Chapple & Loukaitou-Sideris, 2019; Ferm, 2016; Heider & Siedentop, 2024). Practically, our study provides a starting point for potential planning measures to be taken in order to secure such mixed-use development, safeguard urban production, or prevent industrial displacement (Baumgart et al., 2024; Meyer, 2023). Politically, it illustrates how much the calls for productive cities with the New Leipzig Charter (Bundesministerium des Innern, 2020; Gärtner et al., 2021) have developed in reality and shows that they are still in their infancy.

On the other hand, there are, of course, several limitations associated with our approach. First of all, qualitative follow-up studies taking into account, for example, several case studies on selected sites and types would be able to shed light on the assumed structural and functional characteristics and tell us about the intangible social and lived mixed-use development (*gelebte Mischung*; Roskamm, 2024). Second, even if the sample can be considered as fairly representative, a full survey of all Berlin courtyards (see Suwala & Franke, 2025) would show a larger picture by also paying attention to former Integrated Berlin Mix Courtyards that have already been transformed (for Friedrichshain-Kreuzberg, see Baba et al., 2017). Third, methodologically, there is room for variation. Should the block and/or neighbourhood level be considered, and how should the radius be set up? Should a residential function outside the block but in close proximity or vis-á-vis be included? Fourth, planning measures could have been formulated. Is the "New Berlin Mix" a desirable planning objective or rather a reference value?

In the future, we suggest taking a closer, longitudinal look at commercial courtyards in order to assess dynamic developments and possible implications for modification in the composition of mixed-use development, urban

production, commercial gentrification, and industrial displacement. Even if the results are not or only partly transferable to other cities in Germany and Europe, the findings can act as benchmarks or blueprints for functional mixed-use development, guide future urban planning towards a "New Berlin Mix" that is aligned with the New Leipzig Charter, and contribute to the desired economic and societal revival of inner-city areas by reintegrating tangible production into those areas.

Conflict of Interests

In this article, editorial decisions were undertaken by Robert Kitzmann (Humboldt University Berlin), Sebastian Henn (Friedrich Schiller University Jena), and Stefan Gärtner (Institute for Work and Technology).

LLMs Disclosure

To ensure responsible AI use and maintain publication integrity, we disclose using DeepL (version 25.1.4.15077). DeepL was used to translate selected parts of the article, which were then manually verified by researchers; this tool also enhanced our manuscript's grammar and style in those selected parts.

References

Argus, S. (2023, April 4). Gewerbehoftypologie—Wie eine alte Idee aktuelle Probleme lösen kann. *Stadt und Wirtschaft – Blog von Regio Consult*. https://stadtundwirtschaft.de/gewerbehoefe-wie-gewerbe-in-der-stadt-heute-und-in-zukunft-aussieht

Aring, J., Schmitz, S., & Wiegandt, C.-C. (1995). Nutzungsmischung—Planerischer Anspruch und gelebte Realität. *Informationen zur Raumentwicklung*, *6/7*, 507–523.

Baba, L., Lange, U., Otto, B., & Spender, D. (2017). *Gewerbeflächenentwicklungskonzept zur Sicherung der Nutzungsmischung im Bezirk Friedrichshain-Kreuzberg von Berlin*. Bezirksamt Friedrichshain-Kreuzberg.

Bartzokas-Tsiompras, A., & Bakogiannis, E. (2023). Quantifying and visualizing the 15-minute walkable city concept across Europe: A multicriteria approach. *Journal of Maps*, *19*(1), Article 2141143.

Bascón-Borgelt, C., Debold-Kritter, A., Ganssauge, K., & Hartmann, K. (Eds.). (1983). *In der Luisenstadt: Studien zur Stadtgeschichte von Berlin-Kreuzberg*. Transit.

Baumgart, S. (2001). *Gewerbehöfe in der Stadt: Zwischen privaten Entwicklungsträgern und kommunaler Quartiersentwicklung*. Universität Stuttgart.

Baumgart, S., Gärtner, S., Harten, T., Hoffschröer, H., Meyer, K., Raddatz, A., Schneider, U., Schoppengerd, J., Sievers, L., Söfker-Rieniets, A., Stibane, F., Stiehm, S. & Wiese-von Ofen, I. (2024). *Urbane Produktion fördern und bewahren* (Positionspapier aus der ARL 147). Verlag der ARL.

Birkhölzer, K. (2000). Formen und Reichweite lokaler Ökonomien. In H. Ihmig (Ed.), *Wochenmarkt und Weltmarkt: Kommunale Alternativen zum globalen Kapital* (pp. 1–44). Kleine Verlag.

Bodmann, M. (1984). Gewerbebau in der Mischung. In K.-H. Fiebig, D. Hoffmann-Axthelm, & E. Knödler-Bunte (Eds.), *Kreuzberger Mischung: Die innerstädtische Verflechtung von Architektur, Kultur und Gewerbe* (pp. 71–89). Verlag Ästhetik und Kommunikation.

Bodmann, M., & Rieger, H. (1988). *Stadterneuerung und Gewerbe: Der Erneuerungsbedarf der Gewerbebauten in Mischgebieten*. Verlag für Ausbildung und Studium in der Elefanten Press.

Brandt, H., Esch, M., & Kowalski, R. (2018). *Urbane Produktion, Planungsrecht und dezentrale Finanzsysteme* (Forschung Aktuell 10/2018). Institut Arbeit und Technik.

Brandt, M., Butzin, A., Gärtner, S., Meyer, K., Hennings, G., Siebert, S., & Ziegler-Hennings, C. (2017). *Produktion zurück ins Quartier? Neue Arbeitsorte in der gemischten Stadt. Forschungsgutachten*. IAT.

Breheny, M. (1992). The compact city: An introduction. *Built Environment*, *18*(4), 241–246.

Breuer, B., Müller, W., & Wiegandt, C.-C. (2000). *Nutzungsmischung im Städtebau. Endbericht*. Bundesamt für Bauwesen und Raumordnung.

Brixy, U., Gärtner, S., Guth, M., Hackenberg, K., Jonas, A., Meyer, K., & Schonlau, M. (2024). Urbane Produktion analysieren! Empirische Ergebnisse einer bundesweiten Rasterzellenanalyse *Informationen zur Raumentwicklung*, *51*(3), 76–90.

Bundesministerium des Innern. (2020). *The New Leipzig Charter. The transformative power of cities for the common good*. https://www.bmi.bund.de/SharedDocs/downloads/EN/eu-presidency/gemeinsame-erklaerungen/new-leipzig-charta-2020.pdf?__blob=publicationFile&v=8

Burton, E. (2000). The compact city: Just or just compact? A preliminary analysis. *Urban Studies*, *37*(11), 1969–2006.

Chapple, K., & Loukaitou-Sideris, A. (2019). *Transit-oriented displacement or community dividends? Understanding the effects of smarter growth on communities*. MIT Press.

Commission of the European Communities. (1990). *Green paper on the urban environment*: *Communication from the Commission to the Council and Parliament*.

Coupland, A. (1997). *Reclaiming the city: Mixed-use development*. E & FN Spon.

Department of the Environment & Welsh Office. (1995). *Our future homes: Opportunity, choice and responsibility*. His Majesty's Stationery Office.

Döring, T., & Ulbricht, D. (2018). Gentrification hotspots and displacement in Berlin: A quantitative analysis. In I. Helbrecht (Ed.), *Gentrification and resistance* (pp. 9–35). Springer.

Erbstößer, R. (2016). *Produktion in der Stadt: Berliner Mischung 2.0*. Technologiestiftung Berlin.

Ferm, J. (2016). Preventing the displacement of small businesses through commercial gentrification: Are affordable workspace policies the solution? *Planning Practice & Research*, *31*(4), 402–419.

Ferm, J., Panayotopoulos-Tsiros, D., & Griffiths, S. (2021). Planning urban manufacturing, industrial building typologies, and built environments: Lessons from inner London. *Urban Planning*, *6*(3), 350–367.

Fiebig, K., Müller, W., & Thoma, G. (1984). *Kreuzberger Mischung*. Verlag Ästhetik und Kommunikation.

Foord, J. (2010). Mixed-use trade-offs: How to live and work in a compact city neighbourhood. *Built Environment*, *36*(1), 47–62.

Frerichs, S., Küpper, C., Noky, B., Simon, A., Adrian, L., Bunzel, A., Pätzold, R., & Rakel, M. (2018). *Umwelt- und Aufenthaltsqualität in kompakt-urbanen und nutzungsgemischten Stadtstrukturen: Analysen, Fallbeispiele, Handlungsansätze unter Nutzung und Weiterentwicklung des Bauplanungs- und Umweltrechts*. Umweltbundesamt.

Gärtner, S., Kowalski, R., & Brandt, H. (2021). *Produktive Stadt und Urbane Produktion: Ein Versuch der Verortung anhand der Neuen Leipzig Charta* (Forschung Aktuell 04/2021). Institut Arbeit und Technik..

Gärtner, S., & Meyer, K. (2023). *Die Produktive Stadt*. Springer.

Gergs, A., Lacis, L., Albers, H. H., & Suwala, L. (2025). Quick Commerce—Standorte und Standortsysteme von On-Demand Online-Lebensmittellieferdiensten in Berlin. *Standort*, *49*(2), 119–128.

Geyer, H. S., Jr. (2024). The theory and praxis of mixed-use development—An integrative literature review. *Cities*, *147*, Article 104774.

Glatter, J., & Sturm, C. (2020). Lokale Ökonomie der Gentrifizierung—Der Wandel des lokalen Gewerbes als Baustein, Effekt und Symbol der Aufwertung von Quartieren. In S. Henn, M. Behling, & S. Schäfer (Eds.), *Lokale Ökonomie—Konzepte, Quartierskontexte und Interventionen* (pp. 175–189). Springer.

Grodach, C., & Martin, D. (2021). Zoning in on urban manufacturing: Industry location and change among low-tech, high-touch industries in Melbourne, Australia. *Urban Geography*, *42*(4), 458–480.

GSG Berlin. (2024). *Orte schaffen, Menschen verbinden*. https://www.gsg.de/unternehmen

GSG Berlin. (2025). *Unsere Gewerbehöfe in Berlin*. https://www.gsg.de/gewerbehoefe

Gyourko, J. E., & Rybczynski, W. (2000). Financing new urbanism projects: Obstacles and solutions. *Housing Policy Debate*, *11*(3), 733–750.

Hatuka, T., & Ben-Joseph, E. (2017). Industrial urbanism: Typologies, concepts and prospects. *Built Environment*, *43*(1), 10–24.

Hausmann, E., & Soltendiek, C. (1986). *Von der Wiese zum Baublock: Studie zur Entwicklungsgeschichte der Kreuzberger Mischung*. Verlagsgesellschaft in Berlin.

Häußermann, H., & Kapphan, A. (2002). *Berlin: Von der geteilten zur gespaltenen Stadt? Sozialräumlicher Wandel seit 1990*. VS Verlag für Sozialwissenschaften.

Häußermann, H., & Siebel, W. (1997). Stadt und Urbanität. *Merkur*, *51*(577), 293–307.

Heider, B., & Siedentop, S. (2024). *Funktionale Entmischung und gewerbliche Gentrifizierung in der reurbanisierten Stadtregion: Ein Überblick über den Stand der Forschung* (Arbeitspapiere des Fachgebiets Stadtentwicklung 2). TU Dortmund. https://doi.org/10.17877/DE290R-24282

Heinrich, A. J., Marguin, S., Million, A., & Stollmann, J. (Eds.). (2024). *Handbook of qualitative and visual methods in spatial research*. transcript Verlag.

Henckel, D. (1981). *Gewerbehöfe: Organisation und Finanzierung*. Deutsches Institut für Urbanistik.

Henn, S., Behling, M., & Schäfer, S. (Eds.). (2020). *Lokale Ökonomie—Konzepte, Quartierskontexte und Interventionen*. Springer Spektrum.

Herrmann, C., Juraschek, M., Burggräf, P., & Kara, S. (2020). Urban production: State of the art and future trends for urban factories. *CIRP Annals*, *69*(2), 764–787.

Hoffmann-Axthelm, D. (1984a). Geschichte und Eigenart der Kreuzberger Mischung. In K.-H. Fiebig, D. Hoffmann-Axthelm, & E. Knödler-Bunte (Eds.), *Kreuzberger Mischung: Die innerstädtische Verflechtung von Architektur, Kultur und Gewerbe* (pp. 9–22). Verlag Ästhetik und Kommunikation.

Hoffmann-Axthelm, D. (1984b). Neubau für die Mischung. In K.-H. Fiebig, D. Hoffmann-Axthelm, & E. Knödler-Bunte (Eds.), *Kreuzberger Mischung: Die innerstädtische Verflechtung von Architektur, Kultur und Gewerbe* (pp. 53–67). Verlag Ästhetik und Kommunikation.

Hoffmann-Axthelm, D. (1993). *Die dritte Stadt: Bausteine eines neuen Gründungsvertrags*. Suhrkamp Verlag.

Holm, A. (2014). Gentrifizierung—Mittlerweile ein Mainstreamphänomen? *Informationen zur Raumbeobachtung*, *4*, 471–483.

Hoppenbrouwer, E., & Louw, E. (2005). Mixed-use development: Theory and practice in Amsterdam's Eastern Docklands. *European Planning Studies*, *13*(7), 967–983.

Hüttenhain, A. (2012). *Stadtentwicklung und Wirtschaft: Strategien und Handlungsansätze zur Entwicklung von Gewerbestandorten*. Verlag Dorothea Rohn.

Jacobs, J. (1962). *The death and life of great American cities*. Vintage Books.

Krätke, S., & Borst, R. (2000). *Berlin: Metropole zwischen Boom und Krise*. Leske und Budrich.

Kuckartz, U. (2014). *Mixed methods: Methodologie, Forschungsdesigns und Analyseverfahren*. Springer.

Lagendijk, A. (2001). Regional learning between variation and convergence: The concept of mixed land use. *Canadian Journal of Regional Science*, *24*(1), 81–100.

Läpple, D. (2013). Produktion zurück in die Stadt? In W. Siebel & M. Kronauer (Eds.), *Polarisierte Städte: Soziale Ungleichheit als Herausforderung für die Stadtpolitik* (pp. 129–149). Campus Verlag.

Läpple, D. (2016). Produktion zurück in Stadt: Ein Plädoyer. *StadtBauwelt*, *211*, 22–29.

Lynch, K. (1981). *A theory of good city form*. MIT Press.

Martin, D., & Grodach, C. (2023). Resilience and adaptation in gentrifying urban industrial districts: The experience of cultural manufacturers in San Francisco and Melbourne. *International Journal of Urban and Regional Research*, *47*(4), 523–687.

Meyer, K. (2023). Kommunale Strategien und Wirtschaftsflächenkonzepte zur Sicherung und Förderung Urbaner Produktion. In S. Gärtner & K. Meyer (Eds.), *Die produktive Stadt: (Re-)Integration der urbanen Produktion* (pp. 197–228). Springer.

Meyer, K., & Schonlau, M. (2024). Heterogeneity of urban manufacturing—A statistical analysis of manufacturing companies in three German cities. *European Planning Studies*, *32*(8), 1813–1836.

Montgomery, J. (1998). Making a city: Urbanity, vitality and urban design. *Journal of Urban Design*, *3*(1), 93–116.

Mundelius, M. (2006). *Die Bedeutung der Kulturwirtschaft für den Wirtschaftsstandort Pankow. Endbericht*. DIW Berlin.

Murrenhoff, M., & Stollmann, J. (Eds.). (2023). *Neue Kreuzberger Mischung—Kooperative Szenarien der Nachverdichtung für den Rathausblock in Berlin*. Universitätsverlag der TU Berlin.

Pettas, D., & Suwala, L. (2023). The spatio-temporal dynamics of the short-term rental market in Berlin (2008–2020)—The case of Airbnb. *Die Erde*, *154*(1/2), 54–61.

Piegeler, M., & Spars, G. (2019). *Urbane Produktion—Konzept und Messung*. Bergische Universität Wuppertal.

Rabianski, J., Gibler, K., Tidwell, O. A., & Clements, J. S., III. (2009). Mixed-use development: A call for research. *Journal of Real Estate Literature*, *17*(2), 205–230.

Rodenburg, C. A., Vreeker, R., & Nijkamp, P. (2003). Multifunctional land use: An economic perspective. In P. Nijkamp, C. A. Rodenburg, & R. Vreeker (Eds.), *The economics of multi-functional land use* (pp. 3–15). Shaker Publishing.

Roskamm, N. (2024). Kritik der Mischung. In C. Peer & A. Psenner (Eds.), *Urbane Mixturen: Städtebau und Stadtplanung als relationales Handlungsfeld* (pp. 242–265). transcript Verlag.

Rowley, A. (1996). Mixed-use development: Ambiguous concept, simplistic analysis and wishful thinking? *Planning Practice & Research*, *11*(1), 85–98.

Ryckewaert, M., Zaman, J., & De Boeck, S. (2021). Variable arrangements between residential and productive activities: Conceiving mixed-use for urban development in Brussels. *Urban Planning*, *6*(3), 334–349.

Saad, A. (2016). Neue Berliner Mischung? *Bauwelt*, *211*(35), 68–75.

Schmidt, S., Brinks, V., & Brinkhoff, S. (2014). Innovation and creativity labs in Berlin: Organizing temporary spatial configurations for innovations. *Zeitschrift für Wirtschaftsgeographie*, *58*(1), 232–247.

Schwanke, D., & Urban Land Institute. (1987). *Mixed-use development handbook*. Urban Land Institute.

Sharmin, N., Haque, A., & Islam, M. M. (2019). Generating alternative land-use allocation for mixed use areas: Multi-objective optimization approach. *Geographical Analysis*, *51*(4), 448–474.

Stimmann, H. (1993). *Gewerbebauten: Alte und neue „Berliner Mischung."* Senatsverwaltung für Bau- und Wohnungswesen.

Suwala, L. (2024). *Notwendigkeit eines landeseigenen Handwerker-/Gewerbehofes in Marzahn-Hellersdorf*. WISTA Plan.

Suwala, L., Becker, L., Lesem, A., Schwabe, C., Weber, T., & Starre, S. (2025). Planning and designing for a publicly owned commercial courtyard infrastructure—The case of Berlin. *Urban Planning*, *10*, Article 10470.

Suwala, L., & Franke, H. (2025). *Gewerbliche Standortsicherung in Berlin durch Gewerbehöfe. Organisation und Betrieb durch alternative Rechts- und Verbundformen*. Handwerkskammer Berlin.

Suwala, L., Kitzmann, R., Henn, S., & Gärtner, S. (2025). Planning for locally embedded economies in the productive city. *Urban Planning*, *10*.

Suwala, L., Kitzmann, R., & Kulke, E. (2021). Berlin's manifold strategies towards commercial and industrial spaces: The different cases of Zukunftsorte. *Urban Planning*, *6*(3), 415–430.

Vreeker, R., De Groot, H. L., & Verhoef, E. T. (2004). Urban multifunctional land use: Theoretical and empirical insights on economies of scale, scope and diversity. *Built Environment*, *30*(4), 289–307.

Wegener, M. (1994). *Die Stadt der kurzen Wege—Müssen wir unsere Städte umbauen?* (Faculty of Urban Planning Working Paper 136). University of Dortmund.

Wiegand, J. (1973). *Funktionsmischung: Zur Planung gemischter Gebiete als Beitrag zur Zuordnung von Wohn-und Arbeitsstätten*. Arthru Niggli.

Witherspoon, R., Abbott, C., & Gladstone, D. (1976). *Mixed-use developments: New ways of land use*. Urban Land Institute, University of Wisconsin – Madison.

Zimm, G. (1959). *Die Entwicklung des Industriestandortes Berlin: Tendenzen der geographischen Lokalisation bei den Berliner Industriezweigen von überörtlicher Bedeutung sowie die territoriale Stadtentwicklung bis 1945*. Deutscher Verlag der Wissenschaften.

zur Nedden, M., Bunzel, A., Pätzold, R., Strauss, W.-C., Spars, G., Busch, R., Heinze, M., & Müller, A. (2015). *Nutzungsmischung und soziale Vielfalt im Stadtquartier—Bestandsaufnahme, Beispiele, Steuerungsbedarf*. Ministerium für Bauen, Wohnen, Stadtentwicklung und Verkehr des Landes Nordrhein-Westfalen. https://difu.de/sites/difu.de/files/archiv/projekte/2015_09_endbericht-nutzungsmischung-und-soziale-vielfalt.pdf

About the Authors

Fiona Lingenhöle is a master's student in urban design at TU Berlin. Her work explores productive cities, commercial courtyards, and mixed-use development by taking an interdisciplinary, practice-oriented approach to planning and design projects across local and international scales. In addition, she works in real estate development consulting.

Andreas Brück is managing director of K LAB, and senior researcher and lecturer at the Institute of Urban and Regional Planning at TU Berlin. His research interests include utopias and visions of urban tomorrows, incremental urbanism and co-design strategies, and methods and tools of urban analysis and design.

Lech Suwala is a professor in urban and regional economics at TU Berlin. His research interests encompass spatial structural change, regional economic policies, European and regional planning, commercial and industrial areas, family firms, as well as development path trajectories of firms and regions.