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Planning for and Designing a Publicly Owned Commercial Courtyard Infrastructure—The Case of Berlin

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Abstract

The attempt by the Berlin Government to develop a publicly owned commercial courtyard infrastructure is anchored in various district and city-wide planning frameworks. The main rationale is to support small and medium-sized enterprises from manifold branches (light manufacturing, crafts, start-ups, cultural industries) with appropriate and affordable spaces for future industrial and commercial-based services of general interest (*gewerbliche Daseinsvorsorge*). The general urban and architectural design concept for what has been dubbed commercial courtyards 2.0 (*Gewerbehof 2.0*) is derived from the traditional Berlin Mix (*Berliner Mischung*) based on mixed-use development, short distances, local sourcing, and a vertical commercial building structure adapted to contemporary framework conditions. Seven different state-owned properties have been taken into consideration for further development whereof three of these properties (located in the districts of Mitte, Lichtenberg, Marzahn-Hellersdorf) will be showcased here. Methodologically, we carried out location analyses, created urban and architectural designs, utilization concepts and conducted expert interviews, based on a research-to-practice approach and an inside-outside perspective. Our results show that—despite great future ideas such as innovation-oriented, mixed-use, crafts, cultural-creative, manufacturing-based, and socially anchored commercial courtyards with childcare facilities—competing and conflicting uses, economic profitability considerations, the fiscal situation of public authorities, urban development policies, property laws and building regulations impose a tight straitjacket concerning its realization. Pertinent commercial courtyard planning programs and experience with publicly owned operating companies from Berlin itself in the past and in other large German cities indicate that if long-term planning horizons for such endeavors are envisioned these ventures can be successful.

Keywords
Berlin Mix; commercial courtyards; industrial and commercial planning; local economies; mixed-use development; productive city; urban and architectural design; urban production

1. Introduction

Publicly owned land is a critical resource for spatial economic planning and policies. A key component therein is an active property policy assuring current and future industrial and commercial-based services of general interest (*gewerbliche Daseinsvorsorge*) in times of industrial displacement and commercial gentrification (Heider & Siedentop, 2024; Lingenhöle et al., 2025). Against this backdrop, the Berlin Government aims to reestablish a publicly owned commercial courtyard infrastructure anchored in various district (e.g., *bezirkliche Wirtschaftsflächenkonzepte*) and city-wide planning frameworks that are binding for territorial authorities (e.g., *Stadtentwicklungsplan Wirtschaft* 2040; Suwala et al., 2021). The main rationale is to support small and medium-sized enterprises (SMEs) from manifold branches (light manufacturing, crafts, start-ups, service sector) with appropriate and affordable spaces (Suwala, 2024), to supply surrounding communities with craft-based products and services (Suwala & Franke, 2025), and to provide spaces for social and cultural activities where possible (Lesem, 2023). For these reasons, we have analyzed Berlin's current planning efforts to set up such a publicly owned commercial courtyard infrastructure using three case study designs that exemplify approaches to innovation-oriented, mixed-use craft, cultural-creative, manufacturing-based, and socially anchored commercial courtyards.

This article contributes to the often neglected debates about planning (e.g., Baumgart, 2001; Hennings & Dobberstein, 2012) and designing commercial courtyards (Lane & Rappaport, 2020; Rappaport, 2016, 2017), proposing creative architectural and urban designs including utilization concepts (Moughtin et al., 2003; von Bittenfeld & Holz, 1997; WISTA, 2024) adapted to competing and conflicting uses, desires of public authorities, societal demands, logistical, economic, and built environment factors, urban development policies, property laws, and building regulations (Abt et al., 2020; Lesem, 2023; Schwabe, 2022; Schwappach et al., 2023). It asks how a publicly owned commercial courtyard infrastructure should be planned and designed from an integrative mixed-use development perspective. We use a multi-methods approach that consists of location analyses, expert interviews, and architectural and urban designs including utilization concepts based on a research-to-practice approach and an inside-outside perspective combining hands-on and academic expertise. Section 2 of this article outlines planning concepts and frameworks for commercial courtyards in German cities in general, and in Berlin with its novel imperative for the Berlin Mix 2.0 in particular. Section 3 describes the methodology and provides an overview of the location surveyed before analyzing and discussing the three case studies based on urban design and accompanying utilization concepts. Section 4 concludes, summarizes, and reflects on the theoretical, methodological, and practical contribution of this article, including an outlook for future research.

2. Planning and Design Concepts and Frameworks for Commercial Courtyards

2.1. Developing and Designing Industrial and Commercial Spaces in Urban Areas

The ongoing interest in industrial and commercial spaces in urban areas originated from the image of the mixed-used, compact "European city" with short distances (see Breheny, 1992; Häußermann & Siebel, 1997; Wegener, 1994) together with the rediscovery of local economies (Birkhölzer, 2000; Henn et al., 2020) and the recently reformulated imperative of the productive city as a fundamental pillar within the framework of the New Leipzig Charter (Bundesministerium des Innern, 2020; Gärtner et al., 2021; Suwala et al., 2025). There are various reasons in favor of 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 increase sustainability" (Rabianski et al., 2009, p. 206), as well as economic reasons such as increasing employment rates, encouraging local value chains and sourcing, promoting family businesses and SMEs, and providing neighborhoods with commercial services of general interest (*gewerbliche Daseinsvorsorge*; Basco et al., 2021; Liepe et al., 2022; Roost et al., 2021). There are several planning measures designed to safeguard industrial and commercial spaces for this general interest and protect them against commercial gentrification and industrial displacement (Heider & Siedentop, 2024). Some studies differentiate between retention strategies and modernization/investment measures (Hennings & Dobberstein, 2012). Retention strategies aim to preserve, reactivate, and stabilize industrial and commercial areas using a combination of area-based management approaches and formal or informal planning instruments—such as urban development frameworks, binding land-use plans, and strategic land management. These strategies may include the provision of new commercial spaces for business relocations on existing plots or brownfield sites, the targeted development and thematic profiling of commercial areas for specific economic sectors or business types via tailored commercial area concepts, active site marketing, and the implementation of networking initiatives designed to foster collaboration among existing firms in both manufacturing and service sectors (Berens, 2010; Fitzgerald & Leigh, 2002). In contrast, modernization and investment measures aim to plan, initiate, and develop industrial and commercial spaces through the provision and structuring of dedicated business infrastructure—such as commercial courtyards, business parks, and knowledge or technology hubs—alongside the establishment of supportive institutional frameworks, including networks, incubators, start-up ecosystems, and targeted economic development policies (Brinkhoff et al., 2015; Henckel, 1981).

Mixed-use development, however, does not stop with designs at the urban level but is traditionally also anchored at the level of the building itself (Baumgart, 2001; Fiebig et al., 1984; Lingenhöle et al., 2025). Approaches to urban industrial and commercial design, particularly in the context of manufacturing, have historically included spaces for architectural and engineering experimentation. Yet, despite the complexity of these designs, form remains largely driven by function, aligning with production flows in a system of mutual synergies (Rappaport, 2017, pp. 105–107). While this still holds true for contemporary vertical urban factories, these buildings must now also respond to new and more complex conditions (such as low-emission, highly customized manufacturing enabled by advanced technologies), as well as to the expectations and demands of surrounding neighborhoods (e.g., assuring current and future commercial-based services of general interest; Gärtner et al., 2021; Roost et al., 2021). Therefore, designs in this realm should serve a twofold purpose: as urban design that helps overcome the challenge of accommodating manufacturing in cities (e.g., connecting and integrating production, protecting against commercial gentrification) and as architectural design that helps overcome the challenge of accommodating

manufacturing in buildings (e.g., facilitating loading, lifting, and storage, providing interesting design opportunities, inviting entryways). Overall, these designs should promote interaction among manufacturers (high-tech, low-tech, and high-touch) and the surrounding environment (e.g., built structures, neighborhoods) to create spatial identities in a compact, mixed-use city with short distances and local value chains (Lane & Rappaport, 2020; Rappaport, 2016).

2.2. Publicly Owned Commercial Courtyard Initiatives in Germany

Most large cities in Germany or even their districts (e.g., in the case of Berlin) run various (in)formal planning frameworks to identify, develop, safeguard, monitor, and integrate urban/regional commercial and industrial spaces under various denominations (*Gewerbeentwicklungsprogramm*, *Wirtschaftsflächen-* oder *Gewerbeflächenkonzept*, *Gewerbesicherungskonzept*; e.g., Liepe et al., 2022; Meyer, 2023; Metropolregion Hamburg, 2020, 2025; Senatsverwaltung für Stadtentwicklung, Bauen und Wohnen, 2024; Stadtplanungsamt Frankfurt am Main, 2021). In this context, or as subprograms of these planning frameworks, publicly owned commercial courtyards play a crucial building block. They can be understood as multi-story inner-city housing (tenement buildings) and working estates with one or more commercial courtyards from the early days of industrialization in their original version, which are also referred to as Berlin Mix (*Berliner Mischung*; Bascón-Borgelt et al., 1983; Lingenhöle et al., 2025). While commercial courtyards—and similar formats such as commercial parks—can have diverse structural types, they are commonly characterized by a compact, high-density block configuration within buildings or between building complexes. These sites typically accommodate a mix of sectors and businesses, integrating retail, craft-based enterprises, and light manufacturing alongside facilities for storage, production, and workshops (Baumgart, 2001; Bodmann & Rieger, 1988; Fiebig et al., 1984; Lingenhöle et al., 2025; Rappaport, 2016). In addition, commercial courtyards can be defined as facilities offered for rent for the joint accommodation of several legally and financially independent small and medium-sized industrial, commercial, and craft businesses and without any retail outlets and major foot traffic. Usually, uniform planning, construction, marketing, and operational management is carried out by an organization that can be public, private, or a mix thereof. In the case of a public organization, the pricing is often below market office rents thanks to subsidizations. The main rationale for public involvement is the lack of commercial spaces for small businesses in urban areas, growing demand for craft products and services from surrounding neighborhoods, all of which is to be accomplished in the realm of the compact city along the lines of inner development and densification (*Innenentwicklung und Nachverdichtung*; Baumgart, 2001; Habermann, 1990; Henckel, 1981).

With regard to publicly-owned or administered commercial courtyards, certain large cities in Germany run dedicated programs (e.g., Munich, *Münchner Gewerbehofprogramm*; Hamburg, *Hamburger Gerwerbehofkonzept*), are planning on starting a program (e.g., Frankfurt am Main), and/or cooperate with public, city-owned, or mixed operating companies (*Trägergesellschaft(en)*; e.g., *Leipziger Gewerbehof GmbH & Co. KG*; *Dresden—Dresdner Gewerbehofgesellschaft mbH*) to monitor, maintain, safeguard, or develop a publicly owned commercial courtyard infrastructure (see Table 1).

Table 1. Publicly owned courtyard infrastructure and programs in selected cities in Germany (created by the authors).

City	Program	Year(s) of foundation, operating company, and shareholders (in brackets)	Portfolio of commercial courtyards (number, total area in m², and locations)	Future plans (number, total area in m², and locations)
Hamburg	*Hamburger Gerwerbehof-konzept*	1935/2014 *Sprinkenhof GmbH* (among others: *Hamburger Gesellschaft für Gewerbebauförderung mbH)* (part of the city-owned conglomerate *HGV Hamburger Gesellschaft für Vermögens–und Beteiligungsmanagement mbH* (HGV))	13, 96,000 m², various locations	3 publicly owned, 5.800 m² courtyards + 11 in the planning stage
Munich	*Münchner Gewerbehof-programm*	1981/1993 MGH—*Münchner Gewerbehof–und Technologiezentrumsgesellschaft mbH* (City of Munich)	9, 106,000 m²; inner city, brownfields, and 1 technology center	3, 45,000 m²; extension on the outskirts
Dresden	—	1996 *Dresdner Gewerbehofgesellschaft mbH* (City of Dresden, the regional savings bank *Ostsächsische Sparkasse Dresden*, and the co-operative bank *Volksbank Dresden-Bautzen eG*)	4, 25,850 m²; inner city, outskirts, and former brownfields	
Leipzig	—	1994, *Leipziger Gewerbehof GmbH & Co. KG* (City of Leipzig, Leipzig Chamber of Industry and Commerce, Leipzig Chamber of Crafts)	12, 130,000 m²; inner city, outskirts, and former brownfields	1, currently building an innovation center
Düsseldorf	—	1898/1951 *Industrieterrains Düsseldorf—Reisholz AG* (City of Düsseldorf)	6, 11,000 m²; various locations	

2.3. The Turbulent History of Former Publicly Owned Commercial Courtyards in Berlin

Berlin was a pioneer in Germany with regard to a publicly owned commercial courtyard infrastructure. The city-owned *Gewerbesiedlungs-Gesellschaft mbH* (GSG) was founded by the city of West Berlin, the Berlin Chamber of Crafts, and the Berlin Chamber of Industry and Commerce in 1965 (later, two city-owned banks and one co-operative bank also joined as shareholders). Despite a great exodus of many large industrial and service companies in the aftermath of the Second World War from divided Berlin, affordable premises for the remaining production and crafts-oriented SMEs were scarce (GSG, 1999a, 1999b, 2015; Habermann, 1990). GSG aimed to offer businesses reliable economic prospects by creating affordable and well-equipped commercial space and by acting as a redevelopment agency for (a) acquisition, clearance, land readjustment, development, and resale for private commercial use particularly in redevelopment areas, (b) modernization, construction, construction management, administration, and letting of commercial buildings, and (c) building leases (Abgeordnetenhaus Berlin, 2005). This included the refurbishment, maintenance of existing, and development of new commercial courtyards (Habermann, 1990).

Initially, GSG renovated and partially extended many of Berlin's old commercial courtyards and refurbished them for contemporary commercial use in former West Berlin (after the German reunification, in inner-city districts of East Berlin as well). In the 1980s, this task was supplemented by the conversion of old inner-city industrial sites. The sites once occupied by leading industrial companies (e.g., from Berlin's great past as an "Electropolis," such as Osram, Siemens, AEG (*Allgemeine Elektricitäts-Gesellschaft*), and SEL (*Standard Elektrizitätsgesellschaft*), Kitzmann and Suwala, 2018) were transformed into attractive new commercial courtyards in the heart of the city (Habermann, 1990). In East Berlin, new, modern commercial courtyards were built on derelict urban land and industrial sites pending demolition. After the fall of the Berlin Wall, GSG has increasingly concentrated on new construction. Since districts on the north-eastern edge of the city had previously lacked space for SMEs, this was the geographical focus of new construction activities. Hence, in Marzahn, Pankow, Hellersdorf, and Hohenschönhausen, GSG built commercial courtyards (or centers) in line with traditional industrial estates (GSG, 1999a, 1999b). In the late 1990s, GSG developed, maintained, and administered a stock of 50 commercial courtyards with a total area of over 670,000 m². In 2007, 42 commercial courtyards with a total area of over 750,000 m² were part of the GSG's real-estate portfolio before the company was sold (GSG, 1999b, 2015; Sethmann, 2007; own calculations).

A severe banking crisis in Berlin in 2001—commonly referred to as the Berlin banking scandal—coincided with the bursting of the dot-com bubble, intensifying pressure on the Berlin Senate to sell off publicly owned land and real estate in the subsequent years. During this period of economic downturn, the city-owned company GSG attracted particular scrutiny: Around one-third of commercial courtyard spaces stood vacant, revenues were declining, profits were minimal, and no capital reserves were available (Tagesspiegel, 2007a, 2007b). In 2007, GSG was sold to the ORCO Group (a real-estate company with stocks in Germany, Central, and Southeast Europe) with the help of a large US-based investment bank using a share deal (Abgeordnetenhaus Berlin, 2007) before it was renamed GSG Group and acquired by a Luxembourg-based property and real-estate group in 2014, also merely owned by the same person (a Czech multi-billionaire). The transaction was made under special conditions: the company had to establish and maintain its headquarters in Berlin until 2027 and guaranteed real-estate contracts for Berlin-based universities on those premises until 2037/2044 (Abgeordnetenhaus Berlin, 2007). In 2018, GSG Group owned 48 commercial yards in Berlin with a total area of around 918,000 m². All of these courtyards, with the exception of one, were used identically as before privatization. Therefore, during the first 10 years, a moderate expansion took place (Abgeordnetenhaus Berlin, 2018). At the same time, the company—often in cooperation with partners—invested in a high-speed Internet infrastructure, e-mobility charging stations, and rooftop photovoltaic systems. These upgrades were largely financed through refinancing schemes, frequently supported by regional and national banks, to ensure compliance with contemporary technological and sustainability standards (GSG, 2025). Following the expiration of the property speculation period in 2018, the company undertook several portfolio restructuring measures, including the divestment of smaller inner-city properties. Currently, GSG administers 35 commercial courtyards in Berlin with a total area of 845,000 m² (calculated by authors; GSG, 2025; Lingenhöle et al., 2025).

2.4. The Idea of a Novel Publicly Owned Commercial Courtyard Infrastructure in Berlin and a New Berlin Mix 2.0

Despite these developments within the privatized GSG, Berlin plans to (re-)establish a city-owned commercial courtyard infrastructure (Abgeordnetenhaus Berlin, 2020). Currently, four commercial

courtyards remain under the direct or indirect ownership of the City of Berlin: *Künstlerhof Kreuzberg* (through the district of Friedrichshain-Kreuzberg), *Comeniushof* (through Berlinovo, a city-owned housing company), *Gewerbehof Köpenicker Str. 21–27* (through BEHALA, a city-owned company that runs Berlin's ports), and *Heynhöfe* (through BIM, a city-owned real-estate management company), which were not part of GSG's former portfolio (Abgeordnetenhaus Berlin, 2018). In addition, seven empty and underused city-owned premises mostly in the eastern part and on the outskirts of the city have been selected as the most suitable for future consideration (Abgeordnetenhaus Berlin, 2020, 2023). The main rationale is to preserve, steer, and influence Berlin's commercial diversity within the inner city and enhance the city's economic resilience by providing affordable, flexible, and future-oriented workspaces and workshops. This can be achieved by leveraging municipal ownership and management to ensure long-term accessibility for SMEs in the craft, production, and service sectors (CDU Berlin & SPD Berlin, 2023). This is also intended to counter financial speculation in real estate and commercial gentrification, which have displaced many traditional and craft businesses in Berlin (Suwala, 2024). Additionally, municipal ownership facilitates sustainable and socially equitable urban development, taking both ecological and social needs into account (Berliner Senat, 2021).

The city-owned company WISTA GmbH—an experienced business promoter, location developer, and service provider that has run Europe's biggest science and technology park in Berlin-Adlershof for 35 years, as well as other flagship technology and commercial urban quarters (called *Zukunftsorte*, see Figure 1) in Berlin (Suwala & Dannenberg, 2009; Suwala et al., 2021)—has been commissioned as the operating company to deal with the planning, development, operation, maintenance, and commercial management of these future publicly-owned commercial courtyards. This will safeguard public interests as the land and property will remain under public ownership and will be made available exclusively through leasehold arrangements (*Erbbaurecht*), which can span up to 99 years (for community land trusts in the US as a similar model where residents, local businesses, and their neighborhoods act as self-governing and operating bodies; see Davis, 2010). Interested companies will be bound as commercial tenants through public-private contracts (Abgeordnetenhaus Berlin, 2020). The City of Berlin has promised sufficient financial funds as a backup but has also called for innovative solutions with regard to cross-financing (e.g., promotion programs), urban designs (e.g., energy-efficient solutions), and mixed-use development, setting benchmarks for sustainable urban development. In this context, taking matters into own hands appears promising to generate synergies by leveraging learning and experience curves, while also reducing costs through the development of standardized building modules for all commercial courtyards. At the same time, maximum flexibility is maintained through modular spatial concepts, shared workshops, and coworking spaces that allow for adaptable use and promote interaction among diverse stakeholders. This setup can foster innovation and community building, especially when integrated into social and educational institutions (Abt et al., 2020; Lesem, 2023; Ludwig, 2019; Schwabe, 2022; WISTA, 2024).

WISTA and its partners have developed the concept of a hybrid commercial courtyard (also dubbed *Gewerbehof 2.0*; WISTA, 2024). This concept combines traditional and modern elements of the Berlin Mix courtyard (Lingenhöle et al., 2025) with a future-oriented building design. It seeks to enhance economic resilience through innovative mixed-use development, to boost competitiveness by combining craft businesses, SME with urban production—including exhibition spaces—start-ups in urban settings, and social institutions with integrated social and educational facilities. Hence, the hybrid commercial courtyard creates a productive and collaborative work environment that fosters exchange and innovation. This is supported by specialized coworking spaces, prototyping labs, and communal and networking areas. The idea is that the

spatial proximity of commercial enterprises and start-ups will allow for interdisciplinary collaboration and create synergies that support the further business development and maturation of both groups. As such, the hybrid commercial courtyard aims to unite both small-scale high-tech, advanced manufacturing with low-tech, high-touch manufacturing, with both depending on the benefits of close proximity to the city. As a result, the Gewerbehof 2.0 commercial courtyard is expected to make an essential contribution to urban development and strengthen the local economy (Abgeordnetenhaus Berlin, 2023; Senatsverwaltung für Wirtschaft, Energie und Betriebe, 2024; Tagesspiegel, 2022; WISTA, 2024). Next to these and privately-run efforts, the city of Berlin also wants to test cooperatively organized commercial courtyards as a third way in the near future (Suwala & Franke, 2025). Against this backdrop, our team has been asked to provide urban and architectural designs for several potential premises. We have provided three cases and desired variants with different manifestations of this envisioned commercial courtyard 2.0 (*Gewerbehof 2.0*). These three cases exemplify urban designs and utilization concepts for an innovation-oriented commercial courtyard (see Section 3.3), for a mixed-used commercial courtyard with urban production, crafts, and cultural and creative enterprises (see Section 3.4), and a commercial courtyard with childcare facilities (see Section 3.5), all of which are also based on relevant local, political, administrative, and social demands.

3. Analysis and Results

3.1. Methodology

The entire methodology is based on architectural and urban designs that have been conducted as (commissioned) research work to further develop the concept of newly built commercial courtyards by showing several socially and politically demanded variants for the respective premises in the last five years (Abt et al., 2020; Lesem, 2023; Schwabe, 2022). This commissioned work was based on a research-to-practice approach and an inside-outside perspective (Thierbach & Petschick, 2019) in a team consisting of members from the Berlin-owned location developer and business promoter WISTA (inside view: Becker; both views: Lesem, Schwabe, and Weber, all formerly associated with Technical University Berlin, now WISTA) and Technical University Berlin (outside view: Suwala, Starre). This perspective allows for the integration of internal insights, practical experiences, and planning, as well as political practice to some extent, on the one hand, and their systematic classification within current academic discourse on the other hand. Regular meetings (ex ante, in situ, and ex post) between the two sides also provided for systematic validation and verification of the interpretations of the data, knowledge stock, and designs, as well as reflection on the results.

We apply a multi-methods and multi-scalar approach guided by a mixed-use imperative and experimental design based on standardized modules derived from the vertical, hybrid urban factory, urban manufacturing concept (Lane & Rappaport, 2020; Rappaport, 2016, 2017) as the overall operational framework for all three locations. We envision a development measure that combines an urban design concept (Moughtin et al., 2003; von Bittenfeld & Holz, 1997) and an architectural design, including a utilization concept (Brückner, 2010; Hennings & Dobberstein, 2012) to showcase the idea of the commercial courtyard 2.0 (WISTA, 2024). The development of both concepts required several preparatory steps: on-site visits and SWOT-analyses for the location and the surrounding environment based on publicly available and internal site-specific data. In addition, access and operational concepts were initially considered. However, due to the rapidly fluctuating construction cost indices and high inflation rates over the past five years, operational concepts

were ultimately excluded from the analysis. The urban and architectural design concepts (Moughtin et al., 2003) are based on both the preparatory planning phases and pre-existing construction modules developed within the framework of an architectural concept study conducted by KOP GmbH. These modules were predefined as standard elements to reduce overall construction costs (Abgeordnetenhaus Berlin, 2020, 2023; KOP GmbH, 2020). Module sizes have fixed dimensions and act as defaults, but their number and orientation can be flexibly adapted to different space conditions and usable areas on the plots. The commercial and workshop modules can be rented out individually. The connecting module contains the access and technical areas. Therefore, modules were adopted and individually arranged according to various development and access variants (*Erschließungs–und Bebauungsvarianten*), which were then tested. This article presents only the best of the preferred options (*Vorzugsvarianten*) for those modules combined in a spatial arrangement to create a commercial courtyard. It does so within the context of the overarching question: How should a publicly owned commercial courtyard infrastructure be planned and designed from an integrative mixed-use development perspective? The preferred options for both architectural and urban designs and utilization concepts have been evaluated working with the following (a) general criteria for built structures (maximum space utilization, surface sealing rate (in %), green area (in m^2), delivery area (in m^2), efficiency of routes on the site (accessibility of entrances, car parks, delivery areas)), (b) criteria for integration into the neighborhood level (desired economic/social activities, emission/noise issues, design of entryways, zoning regulations), and (c) criteria for integration into the building level (mixed-uses and their arrangement on specific floors, economic consideration for financing). All these criteria are theoretically informed, express partly politically and socially desired outcomes, and have been carefully assessed and relativized by specialist planning authorities and building law experts during interviews (Interviews: S1–2 for Spandau; M-H1–4 for Marzahn-Hellersdorf; M1–3 for Mitte).

3.2. Location of Surveyed Areas

The analyzed locations are part of the seven publicly owned sites in Berlin that were selected for this initiative by the Berlin Senate (Abgeordnetenhaus Berlin, 2020, 2023). Our subsequent selection was based on the different utilization concepts that we applied using theory-based and practice-based urban (production) imperatives, available plots, the specific priorities of district administrations, and social concerns after consultations and interviews with relevant stakeholders and experts to represent the full range of possibilities. The surveyed areas are scattered across Berlin and include both former West (Spandau) and East (Marzahn-Hellersdorf) Berlin premises, as well as an inner-city area close to the former border (Mitte).

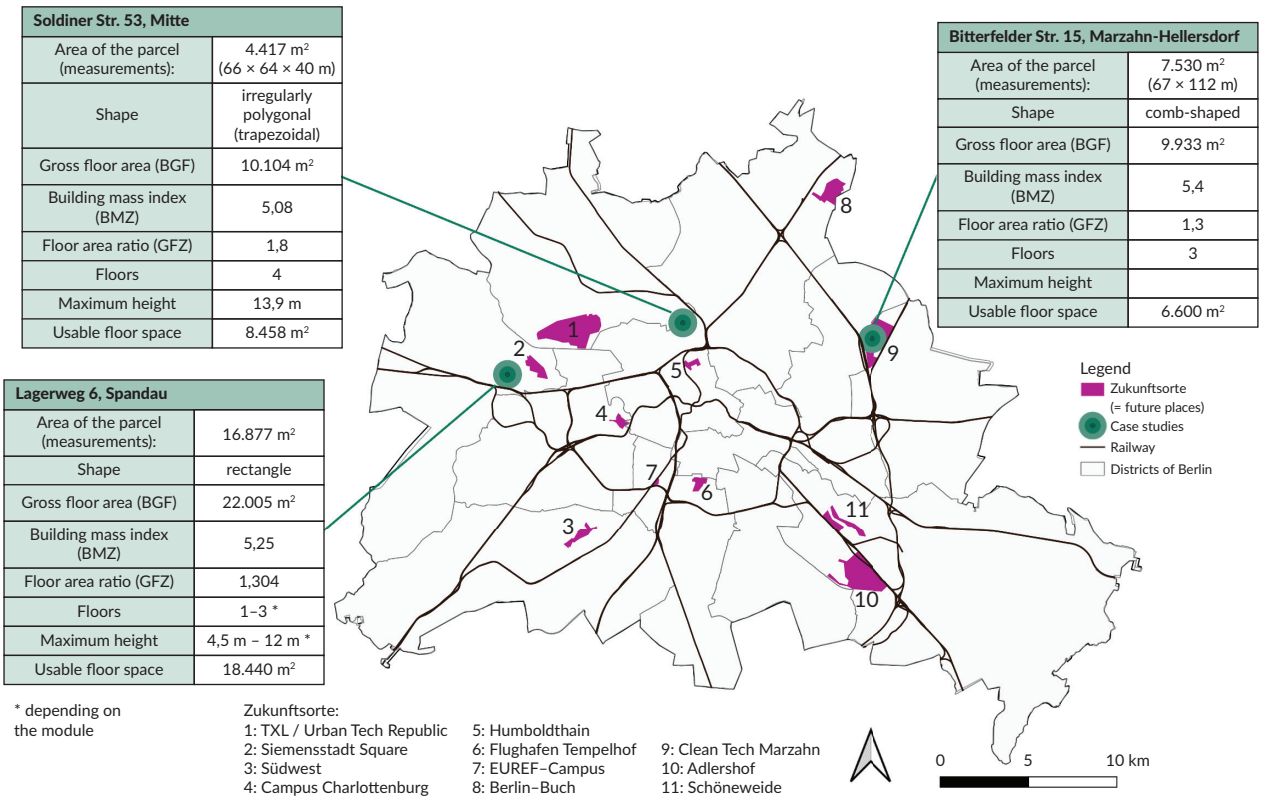

Figure 1. Locations of surveyed areas within Berlin and *Zukunftsorte* (existent or envisioned future commercial quarters; figure created by authors).

3.3. The Innovation-Oriented Commercial Courtyard in Spandau

3.3.1. Site Profile

The Berlin-owned potential site at Lagerweg 6 is located in the Spandau district's Haselhorst neighborhood in northwest Berlin. The premises are currently underutilized (e.g., used for storage) and are located within a mixed-use area on the city's outskirts, positioned between small-scale commercial zones and larger commercial and industrial areas, with the Spree river forming the southern boundary. The site is 3km west of Siemensstadt Square, the newest of the 11 *Zukunftsorte* (envisioned future commercial quarters; Figure 1; Suwala et al., 2021). Although the site currently lacks the necessary conditions for a commercial yard—such as adequate land development and access to local infrastructure—it is still well connected to Berlin's main road network. The property lies within an area designated by two binding land-use plans and is safeguarded as an industrial area. Given that this poses challenges to the development of a commercial courtyard, it is recommended that the preparatory land-use plan be revised to designate the area for commercial use (Geotechnik und Dynamik Consult GmbH, 2021; Hoffmann-Leichter Ingenieurgesellschaft mbH, 2021).

3.3.2. Urban Design Concept

We are illustrating the desired case of the urban design concept, which has been derived from two preferred options (*Vorzugsvarianten*) and selected from nine development variants (*Erschließungs—und Bebauungsvarianten*; see Abt et al., 2020, Interviews S1–2). The urban design concept presented here

combines a compact design with the maximum possible utilization of the plot. This results in both a high degree of sealing and a large amount of space for commercial use. The commercial courtyard consists of two buildings (see Figures 2a and 2b). The first building in the north of the plot consists of five three-story commercial modules arranged parallel to one another, which are linked to each other via a connecting module. A workshop module is provided between each commercial module. Small courtyards are created between the modules to reinforce the character of the commercial courtyard. The second building in the south is constructed in a similar way. It consists of a communal module and three three-story commercial modules, which are arranged parallel to one another and connected to each other via a shorter workshop module, creating courtyards. To enhance the quality of the open spaces, the rear courtyard areas have been greened, as has the zone directly adjacent to the Spree river (see Abt et al., 2020, p. 174).

The property can be accessed via a road on the western plot boundary. This road is accessible in both directions. There are turning options in the southern area and between the two buildings. Short-term parking facilities are located along the road in front of the commercial modules and workshops. Above-ground parking is available to the north and south of the site. There is also an underground parking garage accessible from the northern area of the site. Loading zones are located between the two structures. The commercial modules are accessible both from the access road and via the connecting module. The workshops can also be accessed via separate entrances and via the commercial modules (Abt et al., 2020). The proposed urban design concept does not currently comply with existing planning regulations for

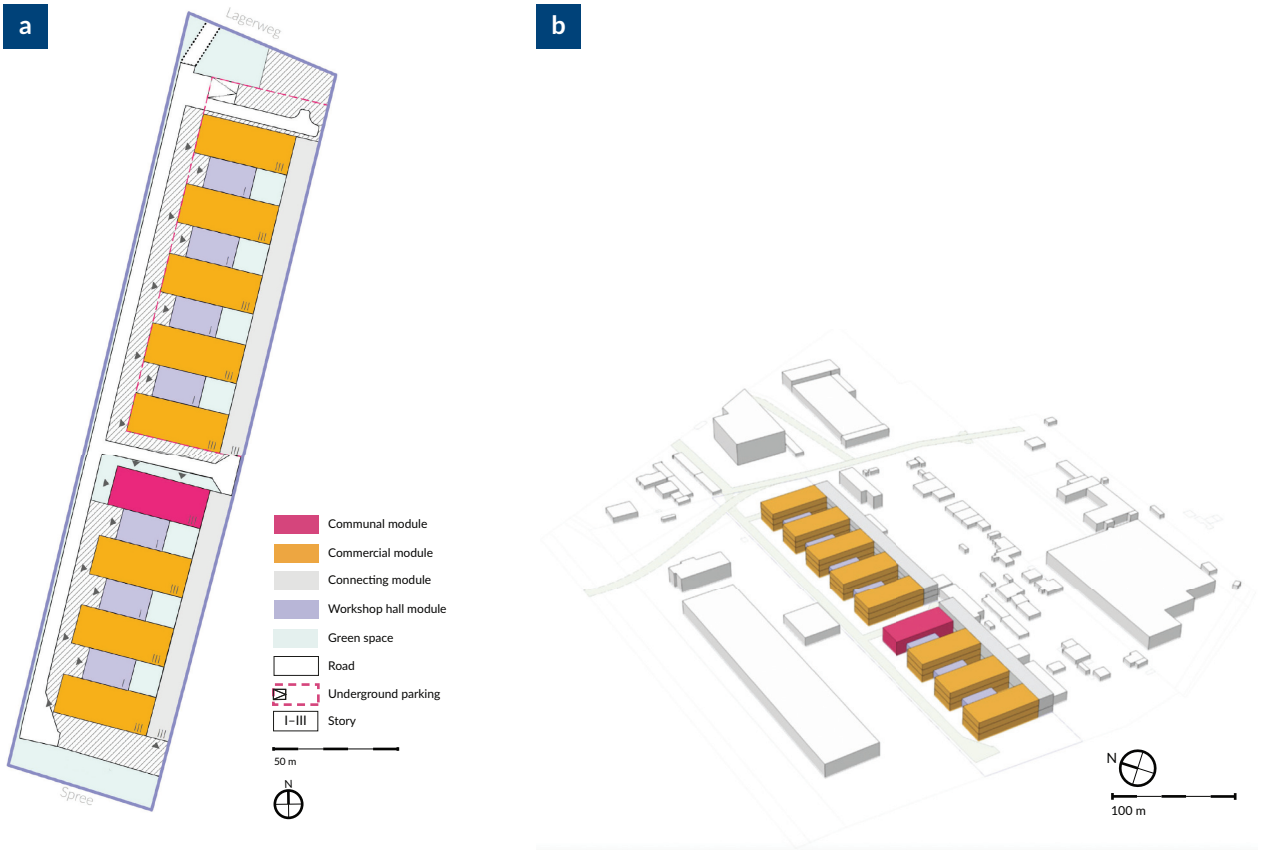

Figure 2. (a) Plan view of potential commercial courtyard in Spandau; (b) surroundings of potential commercial courtyard in Spandau (figures created by authors).

the site, making an amendment to the applicable preparatory and binding land-use plans necessary. It is also likely that the planned development will exceed the urban development ratios for commercial areas stipulated in the Federal Land Utilization Ordinance. This means it would be necessary for the responsible urban planning office to request an exemption and provide valid argumentation. The high degree of sealing in combination with an underground garage also suggests a conflict with the drainage on the property. This is because diverting rainwater into the sewage system is only permitted in exceptional cases in Berlin. Instead, rainwater must be managed directly on the property.

3.3.3. Utilization Concept

The urban design concept described above will create a total of more than 18,000 m² of usable floor space (see Figure 3). More than half of this is accounted for by the three-story commercial modules. A total of 1,400 m² of usable space is in the single-story workshops, around 1,300 m² of usable space is assigned to communal areas, and the remaining space (4,900 m²) is taken up by the three-story connecting modules. The site offers the possibility of an innovation-oriented profile. This approach both capitalizes on the site's proximity to Siemensstadt Square—a designated *Zukunftsort*—and responds to the local demand in the Spandau district for the development of similar spaces (Abt et al., 2020, p. 198). It uses the space very efficiently in line with Berlin's enclosed perimeter block development (*Blockrandbebauung*).

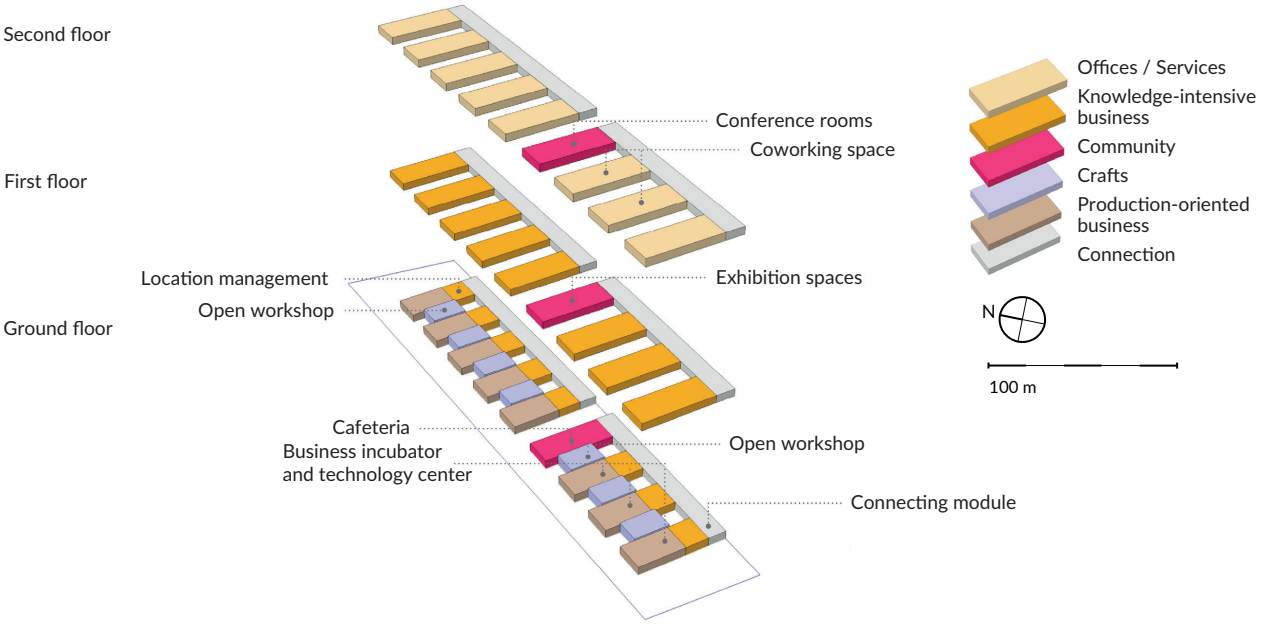

Figure 3. Utilization concept for a potential innovation-oriented commercial courtyard in Spandau (figure created by authors).

Given the anticipated innovation-oriented profile of the commercial courtyard, the commercial modules will primarily accommodate innovation-oriented and knowledge-intensive businesses on the first floor (in orange). They are beneficial not only for the profile but also for cross-financing the entire building complex as generous funding conditions are available via national (e.g., Joint Task for the Improvement of Regional Economic Structures, *Gemeinschaftsaufgabe zur Verbesserung der regionalen Wirtschaftsstruktur*) and European funds (e.g., European Regional Development Fund) for innovation and start-up activities.

Production-oriented businesses (brown) and crafts (light blue) can be found in the workshop modules and on the ground floor of the commercial modules. These businesses prefer to be close to the access roads. This also means that ceiling loads and freight elevators on the upper floors can be reduced, which in turn has a positive effect on construction costs. Knowledge-intensive uses are primarily planned for the first floor, but some will also be located on the ground floor to ensure proximity to the production facilities (see brown-orange modules). The mutual linkage is also expressed via the business incubator and technology center in the southernmost ground floor workshop module that could create synergies between production and innovation-oriented start-ups. Conventional office uses and services (yellow) are only of secondary importance and can be located on the second floor together with a coworking space, as they have no logistical requirements.

The utilization concept proposes several communal modules: a cafeteria positioned centrally within the complex on the ground floor, exhibition spaces on the first floor, and joint conference rooms on the second floor. The riverside area along the Spree river offers space for further communal areas. The two workshops will serve as open workshops. Three commercial modules in the southern structure are planned for a start-up and technology center to complement the innovative approach and knowledge-intensive industry. Two commercial modules in the southern structure are to be used as coworking spaces on the second floor. The site management will be housed in the northernmost commercial module on Lagerweg, providing a good drop-in center and control point directly at the entrance to the commercial courtyard. The innovation-oriented commercial courtyard in Spandau marks a distinct conceptual shift away from the traditional Integrated Berlin Mix model that combines working functions with residential uses, as well as from Adjacent Commercial Courtyards that primarily focus on crafts and urban production (Baumgart, 2001; Fiebig et al., 1984; Lingenhöle et al., 2025). At the same time, it rethinks the commercial courtyard concept in a modern way and combines the areas of crafts, production, knowledge, and innovation to create synergies along the hybrid commercial courtyard 2.0 concept (WISTA, 2024). The setup adds to the imperative of dense mixed-use development (Rowley, 1996; Wiegand, 1973) and is also reasonable in terms of cross-financing between uses and resilience in economic expansion and recession phases.

3.4. The Mixed-Use Commercial Courtyard With Urban Production, Crafts, and Cultural and Creative Enterprises in Marzahn-Hellersdorf

3.4.1. Site Profile

The potential Berlin-owned site at Bitterfelder Str. is located in the Marzahn-Hellersdorf district's Marzahn-Nord neighborhood in northeast Berlin. The premises are currently only partly used (e.g., office for commercial and social enterprises) and are located in an area that is designated as commercial building land in the preparatory land-use plan. As the designated plot is not covered by a legally binding land-use plan, permission for development is determined in accordance with Section 34 (1) of the Federal Building Code (BauGB), which applies to unplanned inner areas. In line with planning requirements, the proposed use must correspond to the prevailing character of the immediate context, a criterion that is met as the adjacent areas are predominantly designated and used for commercial purposes. The evaluation standard for permission approval is therefore the surrounding character of the built environment. The site is not far from CleanTech Business Park Marzahn (CTM), one of Berlin's *Zukunftsorte*, which, however, is in its infancy (see Figure 1; Liepe et al., 2022; Suwala, 2024; Suwala et al., 2021).

3.4.2. Urban Design Concept

Here we illustrate the desired urban design concept, which is identical to the preferred option (*Vorzugsvariante*) and selected from six development variants (*Erschließungs–und Bebauungsvarianten*; Schwabe, 2022, p. 96; Interviews M-H 1–4). The urban design concept presented offers a compromise between the optimum use of the existing space potential and open space, in addition to a large delivery area and efficient routing through an underground car park (see Figures 4a and 4b). It includes a three-story setting consisting of four commercial modules, a communal module, an access axis, and three single-story workshop hall modules. The communal module, which can be used as a cafeteria, is located on the eastern part of the site and is clearly visible from Bitterfelder Straße. The communal module could also be shared with companies at the *Zukunftsort* CTM (Figure 1) on the opposite side of the street. Since only eligible companies are permitted at CTM, and communal uses are excluded, a synergy is created through this shared infrastructure. The urban design concept also respects the adjacent noise-sensitive public uses by keeping the eastern area free of commercial and craft modules as a kind of buffer area.

The commercial courtyard includes a two-lane access road with a minimum turning curve and only one intersection at the feeder road. The access road is designed for larger vehicles, such as heavy-goods vehicles, to pass each other and complies with the relevant guidelines for the construction of urban roads. Furthermore, a sidewalk leading up to the minimum turning curve is provided. This form of development is suitable for areas without high development requirements and with a limited plot depth, such as this area (see Reicher, 2017). Due to the planned underground parking, this preferred option only requires a delivery area but no outdoor parking spaces, thus creating a large usable area. Although underground parking leads to higher costs than outdoor parking spaces or parking decks (see Wüstenrot Stiftung, 2012), an amortization is expected in the long run, thanks to the enhanced usable area generating higher revenues.

The urban design concept presented here is in line with the development law within the BauGB. As the designated plot is not covered by a legally binding land-use plan, the building authority must assess whether

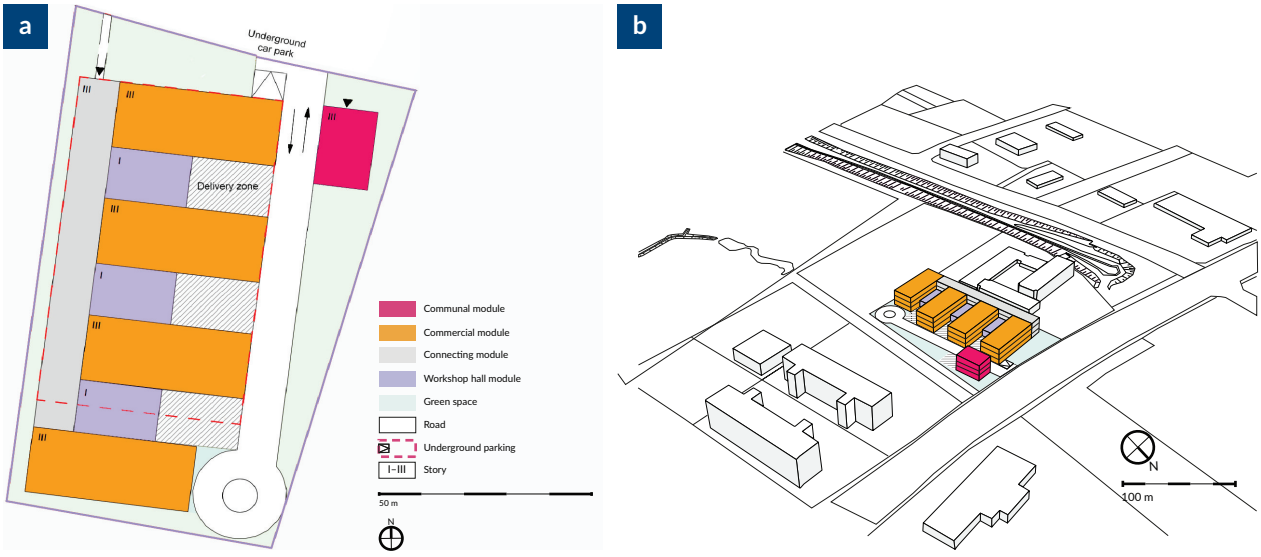

Figure 4. (a) Plan view of potential commercial courtyard in Marzahn-Hellersdorf; (b) surroundings of potential commercial courtyard in Marzahn-Hellersdorf (figures created by authors).

a proposed development project complies with Section 34 of the BauGB. In this context, the key parameters—including type and scale of use, building method, and buildable area (§34 (1) BauGB)—must follow the prevailing character of the immediate surroundings (§34 (2) BauGB; Figure 4b). As the immediate surroundings are used for commercial purposes and there are no residential buildings on the site to date, the envisioned commercial area (Section 8 of the Federal Land Utilization Ordinance) can be built. Although ecological considerations may support the renovation of the existing building, the flexibility required for modern commercial courtyards—particularly in terms of adaptable floor plans typically provided by skeleton construction—argues against its preservation.

3.4.3. Utilization Concept

The urban design concept will create a total of 6,600 m² of usable space. Craft businesses (in violet, in Figure 5) are prioritized in the utilization concept and should preferably be located on the ground and first floors (2,850 m² of usable space). At least two freight elevators are considered mandatory for supplying the craft producers on the first floor. The second-largest proportion of space is allocated to two modules that are planned for manufacturing production (brown) on the ground and first floor and for artists (green, cultural and creative industries) on the second floor (900 m² of usable space each, totaling 1,800 m²). In addition, we envision knowledge-intensive businesses (orange), which can occupy the higher floors (first and second floor) as part of office use (1,350 m² of usable space). The rest is planned for a communal module (red) with a small canteen, meeting spaces, and an exercise room (gym). This concept would result in a broad mix of uses, including crafts, manufacturing, and knowledge-oriented businesses. This aligns with the district's economic space concept (*bezirkliches Wirtschaftsflächenkonzept*), which emphasizes the creation of suitable and affordable commercial spaces, particularly for local businesses, including small-scale production companies, craft enterprises, and cultural/creative endeavors (Liepe et al., 2022). Craft businesses play an important role as local hubs for supplying the direct economic environment (*Zukunftsort*, CTM), the neighborhood of Marzahn-Hellersdorf, with various goods, services, and materials (Suwala, 2024). The utilization concept also promotes the spatial proximity and hub of both high-tech and low-tech (manufacturing) companies in the vicinity of the site, as well as accompanying crafts from the commercial courtyard. The idea is to create synergies with (local) hidden champions, ordinary manufacturers, craftspeople, and social stakeholders through existing artists in vicinity (Suwala et al., 2024).

The special location in the *Zukunftsort* CTM (Figure 1) and the resulting opportunities for cooperation with CTM are considered a great strength. Hence, companies that benefit from technologies and products for a clean and resource-friendly economy should move into the commercial courtyard (see Suwala, 2024; Suwala et al., 2021). The relationship with CTM could be established both as a customer-supplier link—for example, in areas such as facility management or catering—and as a manufacturer-supplier link, where products developed at CTM are maintained for clients within the commercial courtyard. Within this context, the commercial courtyard is intended to serve as a hub for district-oriented synergies, fostering collaboration both internally and with its urban surroundings. This mixed-use crafts-based, artist-friendly, and manufacturing-oriented commercial courtyard in Marzahn-Hellersdorf fits the traditional concept of the Integrated Berlin Mix Courtyard or Adjacent Commercial Courtyards in principle—only the residential function is missing (Baumgart, 2001; Fiebig et al., 1984; Lingenhöle et al., 2025). At the same time, it rethinks the commercial courtyard concept in a modern way and combines the areas of crafts, production, knowledge, and innovation to create synergies. The setup adds to the imperative of dense mixed-use

development (Rowley, 1996; Wiegand, 1973) and also makes sense by creating synergies through complementary activities with surrounding premises, companies, and stakeholders.

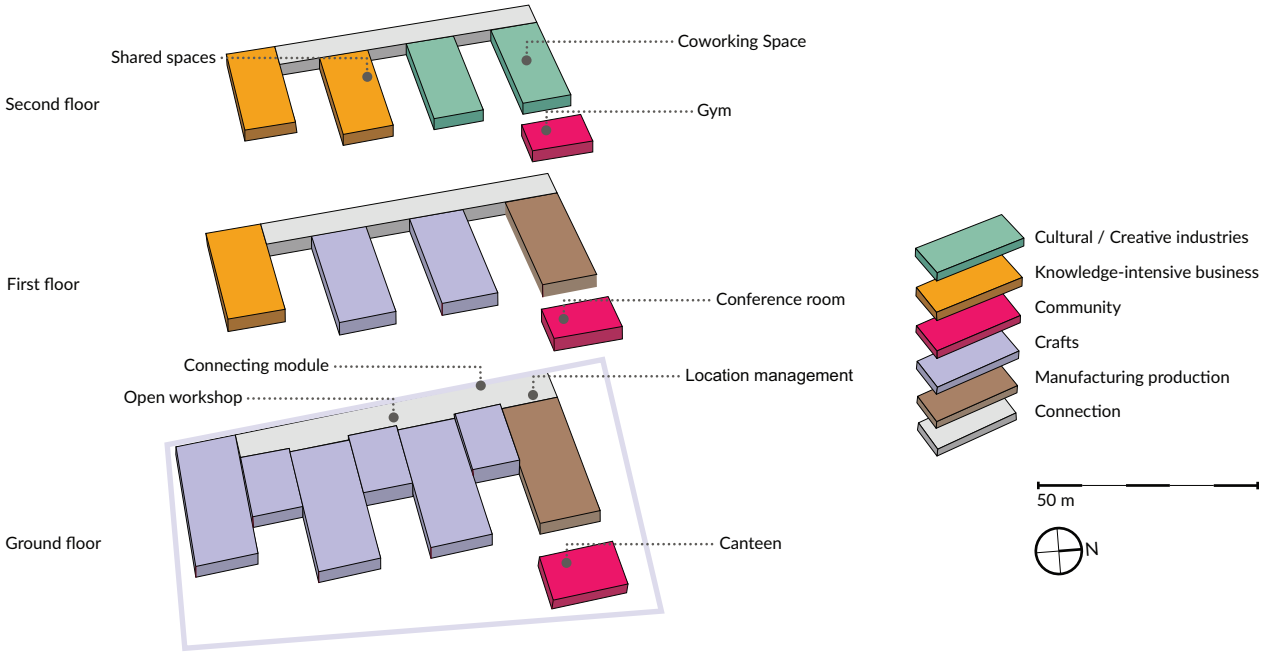

Figure 5. Utilization concept for a potential mixed-use commercial courtyard with urban production, crafts, and cultural and creative enterprises in Marzahn-Hellersdorf (figure created by authors).

3.5. The Commercial Courtyard With Childcare Facilities in Mitte

3.5.1. Site Profile

The site at Soldiner Strasse 53/Holzstrasse 1 is located in Berlin Mitte's Gesundbrunnen neighborhood, north of the city center, but still in an area adjacent to the inner city (Figure 1). The double plot is situated in a transitional area between residential and commercial establishments, at the southern edge of a small-scale inner-city commercial area. Both plots are owned by the City of Berlin. The southern plot at Soldiner Strasse 53 is currently leased to a landscaping company. The adjacent northern plot at Holzstrasse lies vacant with an abandoned building that has been empty for years. The public transportation connection is quite well established (two rail and tram lines in the vicinity), with two highways nearby—although the direct access could be improved (Bezirksamt Mitte, 2005; Hoffmann-Leichter Ingenieurgesellschaft mbH, 2024).

3.5.2. Urban Design Concept

Here we illustrate the desired urban design concept derived from two preferred options (*Vorzugsvariante*) and selected from seven development variants (*Erschließungs–und Bebauungsvarianten*; Lesem, 2023, pp. 121, 129; Interviews M1–3). The urban design concept presented offers a compromise between maximum site utilization and a high degree of surface sealing but also clearly separates the commercial courtyard and the childcare facility (see Figures 6a and 6b). From the connecting module, which is positioned along Holzstrasse, three four-story commercial modules and two single-story workshop hall modules extend outward. A four-story-mobility hub/car park completes the ensemble to the north. In the southern area, the

compact structure is broken up by a courtyard passage for cars through the connecting module. Combined with the inner courtyard area, this passage is somewhat similar to the design of traditional commercial courtyards. However, the building's setbacks and projections are not significant enough to create small-scale and diverse courtyard structures.

Nevertheless, the positioning of the building components ensures clear communication to the outside in terms of urban planning and ideally reduces noise emissions from inside the block. Access is provided via Holzstrasse with a four-story car park (mobility hub: in grey) adjacent to the northern part of the property. It connects to the connecting module (in orange) and allows for delivery access to the upper floors of the commercial modules without elevators. Given the relatively small size of the car park, it should be reserved exclusively for commercial courtyard users and their logistical efforts. For internal traffic, a half two-lane circular road is planned from the car park, which runs along the rear of the commercial courtyard and through the courtyard entrance at the southern end of the connecting module to meet Holzstrasse at the southeast of the property. This road is also intended to serve as an emergency and rescue route.

A notable advantage of this location is that the necessary planning regulations are already in place, allowing for legally secure development. The site falls within an area designated by a binding land-use plan, which permits high-density development and utilization by production-oriented businesses, making it particularly suitable for establishing a commercial courtyard (Bezirksamt Mitte, 2005). The site is being considered for both a commercial courtyard and a childcare facility. Due to Berlin's severe land scarcity, there are discussions about implementing a commercial courtyard with an integrated childcare facility (Bezirksamt Mitte, 2024). However, combining both uses in a single building presents certain risks, particularly regarding traffic safety and mutual noise exposure. These risks can be significantly minimized by clearly separating both functions. Therefore, the childcare facility (in blue) is located on Provinzstraße and Soldiner Straße in areas that are out of scope for the commercial courtyard (see Figures 6a and 6b). This idea of spatial separation was confirmed by district specialist planners during interviews (Interviews M2–3).

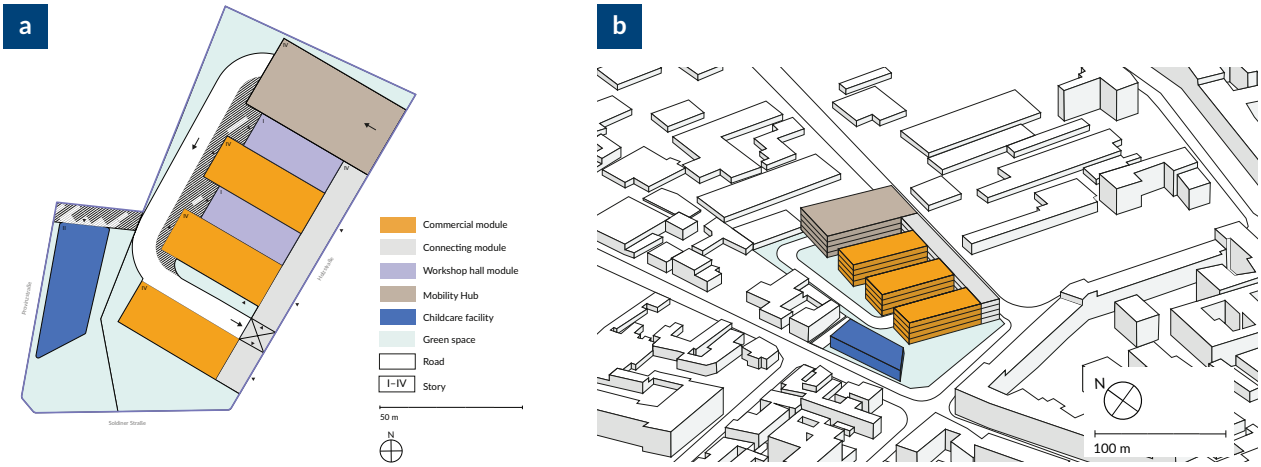

Figure 6. (a) Plan view of potential commercial courtyard in Mitte; (b) surroundings of potential commercial courtyard in Mitte (figures created by authors).

3.5.3. Utilization Concept

The utilization concept offers roughly 9,300 m² of usable floor space, about 826 m² for the childcare facility and approximately 8,500 m² within the commercial courtyard, allocating about 60 % to the commercial modules divided into various functions with spaces for production-oriented businesses such as manufacturing (brown), crafts (violet), and cultural and creative businesses (green; Figure 7). This setup should be understood as an illustrative example of possible uses and their distribution as the buildings are designed to be flexible enough to adapt to changing economic conditions and resulting needs. Various usage scenarios were also developed for the mobility hub/car park, particularly regarding the distribution of parking spaces for different modes of transport (cars, bicycles, cargo bikes).

The childcare facility, designed for approximately 100 children, requires about 826 m² (in order to comply with the specific regulations for such facilities, 1,200 m² of indoor space is needed, thus the modified module in Figures 6a, 6b, and 7; for details, see Lesem, 2023, pp. 100–103) split across two floors. The building itself would occupy about 413 m² (600 m²) of the 1,600 m² of land required for the childcare facility. The total share (building and outdoor areas) of available space (both plots) is roughly one fifth. This is necessary due to the legally required outdoor spaces. To use land resources more efficiently (through higher building density), architectural and legal assessments should examine whether outdoor spaces for the childcare facility could be (partially) established in the commercial courtyard's roof areas. The utilisation concept (Figure 7) strictly reserves ground floors for manufacturing businesses (in brown). The first floor is designated for manufacturing businesses using lighter machinery. Other uses are positioned as high up as possible. Test beds for media and creative industries (artists, in green), as well as spaces for knowledge-intensive businesses (in orange) are to be located away from the commercial area. This proposed mix of uses focuses strongly on manufacturing businesses and crafts to prevent the site from developing into a purely office and service location. Simultaneously, the mix should accommodate commercial uses that create substantial

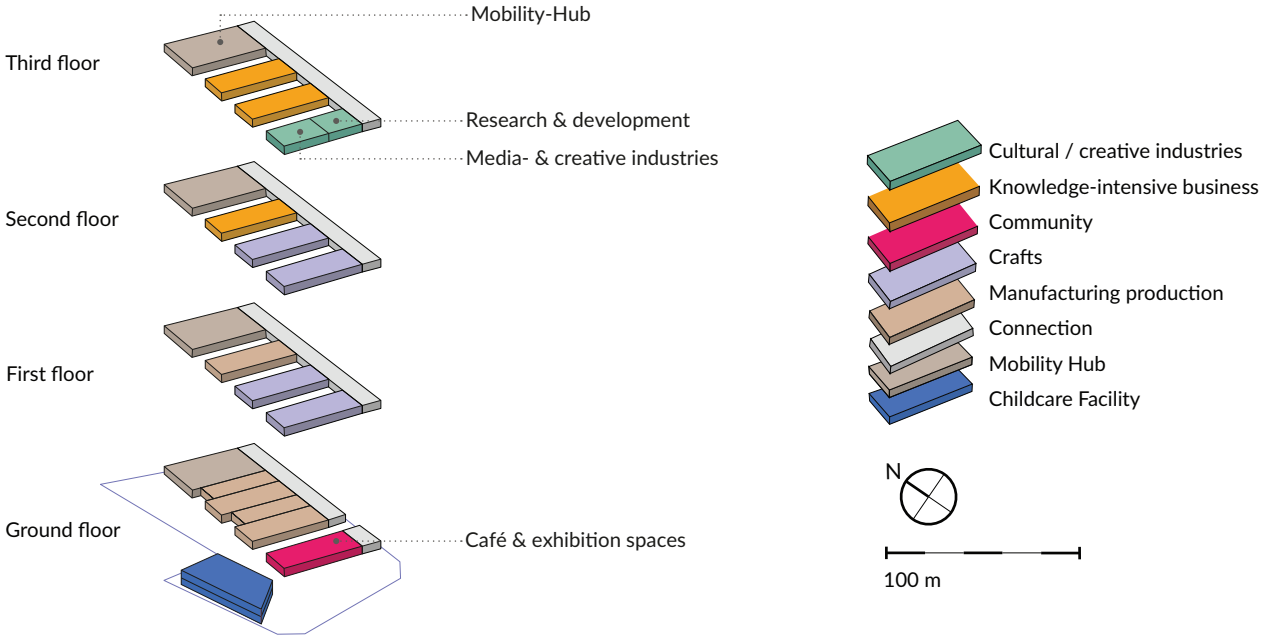

Figure 7. Utilization concept for a potential commercial courtyard with childcare facilities in Mitte (figure created by authors).

employment opportunities, are integrated into local value chains and provide the surrounding neighborhood with craft products and services (Suwala & Franke, 2025). This manufacturing and crafts-based commercial courtyard in Mitte reflects the traditional concept of the Integrated Berlin Mix Courtyard or Adjacent Commercial Courtyards in its original sense (Baumgart, 2001; Fiebig et al., 1984; Lingenhöle et al., 2025). The childcare facility that was planned in a separate building is a special feature requested by the district of Mitte. This feature enlarges the commercial courtyard to include a social function to serve the surrounding residential neighborhood. The utilization is in line with the imperative of dense mixed-use development (Rowley, 1996; Wiegand, 1973) but needs to remain flexible to allow for other uses.

3.6. Discussion of Results

All three case studies reflect different aspects of the *Gewerbehof 2.0* concept, as envisioned by the city-owned commercial courtyard development initiative—shaped by input from local administrations, social dynamics, and market-driven requirements. These stylized yet practice-oriented designs have been taken seriously by the city-owned developer WISTA and have been the subject of discussion both at the district level (Spandau, Marzahn-Hellersdorf, Mitte) and at the city-wide level (Berlin Senate). In addition, before developing the urban and architectural designs including the concepts, we consulted experts in specialist planning, urban development, and building codes. It should be noted that considerable effort was invested in developing the many variants (*Erschließungs–und Bebauungsvarianten*). These were evaluated based on theory-based criteria (general, neighborhood, and building level; see Section 3.1) around the compact city mixed-use development paradigm (Rowley, 1996) and the vertical/hybrid factory concept (Lane & Rappaport, 2020). Only the most desired variants (*Vorzugsvarianten*) have been presented. In particular, the commercial courtyard with the childcare facility was challenged and disputed; therefore, we opted to locate the childcare facility in a separate building. At the same time, there are similar urban and architectural designs that have been created for certain premises by other parties (e.g., a commercial courtyard with the childcare facility and a communal sports hall in addition to the location in Mitte; see Bezirksamt Mitte, 2024). A first site in Lichtenberg is currently being developed based on a concept similar to the innovation-oriented commercial courtyard proposed for the Spandau location (see Section 3.3). Preliminary assessments and planning steps have already been completed; a Berlin-based architecture firm won the competition for the urban design. The financing arrangement opts for a mixed calculation that consists of WISTA's own funds, supplemented by equity contributions from the Berlin Senatsverwaltung für Wirtschaft, Energie und Betriebe, as well as borrowed capital and planned assets from the Joint for the Improvement of Regional Economic Structures (*Gemeinschaftsaufgabe zur Verbesserung der regionalen Wirtschaftsstruktur*) to fund the upper floors with innovation-oriented activities (start-ups, incubators). Even if the idea sounds new, the *Dresdner Gewerbehofgesellschaft* has also developed such an innovation-oriented model where good practices could be transferred. Here, Berlin should be open to negotiations and exchange ideas with other cities (Munich, Hamburg; see Table 1). A program that clearly outlines the roadmap for the coming years might also help. Although we partly discuss operating concepts elsewhere (Abt et al., 2020; Lesem, 2023; Schwabe, 2022), construction costs, a smooth planning process, availability of specialized workers, and the city's fiscal situation will ultimately impact the actual implementation. Two of the presented locations (Mitte and Marzahn-Hellersdorf) are currently being considered for short to medium-term development (Abgeordnetenhaus Berlin, 2023; Senatsverwaltung für Wirtschaft, Energie und Betriebe, 2024).

4. Conclusion and Outlook

We have showcased three forward-looking concepts for innovation-oriented, mixed-use, cultural, creative, manufacturing-based, and the socially anchored commercial courtyards with childcare facilities by urban and architectural designs and utilization concepts. Theoretically, we have revitalized the mostly outdated discussion on planning, design, and utilization for new (urban) commercial courtyards (Baumgart, 2001; Hennings & Dobberstein, 2012; Lane & Rappaport, 2020; Moughtin et al., 2003; von Bittenfeld & Holz, 1997). There are definitive lessons to be learned for local contexts in Continental Europe, the UK, and North America (see Ferm et al., 2021; Rappaport, 2025) on how to plan, create, design, and use novel and mixed-use commercial areas in productive cities. Methodologically, our research-to-practice approach and an inside-outside perspective have proven to be effective as such an endeavor can not only promote much closer cooperation between practical urban design, economic operators, and academia but also envision theory-based, methodologically sound, and practically recognized commercial courtyard designs at both the neighborhood and building level. Empirically, innovative paths were explored when putting the designs and utilization concepts on paper in an effort to integrate a range of economic, administrative, logistical, and built environment requirements and stakeholder perspectives. Our approach breaks new ground in the field of commercial planning where, so far, such specifications were decided by administrators, specialist planners, entrepreneurs, and investors behind closed doors.

Of course, there are several limitations to our study that we would like to bring to the fore. From a theoretical perspective, there are only a few studies and guidance books on the urban and architectural design of commercial areas in general and commercial courtyards in particular (see von Bittenfeld & Holz, 1997; Lane & Rappaport, 2020; Moughtin et al., 2003; Rappaport, 2016). They often resemble synopses or encyclopedic collections of exemplary cases or practical guidelines, offering limited analytical depth and contributing little to theory development and discourse. Therefore, we have partly based our practical designs and utilization concepts on the hands-on experience of specialists (e.g., logistics managers, architects, planners, and administrators) from interviews (Interviews S1–2, M-H1–4, M1–3), as well as pragmatic considerations aimed at increasing the proportion of low-tech and craft-based businesses that otherwise struggle to find suitable premises. However, we described the construction of new premises and did not consider the refurbishment of existing buildings and their potential (for the UK, see Ferm et al., 2021; for the US, Lane & Rappaport, 2020). In addition, it was not possible to calculate the construction costs properly—despite city-owned premises—as current political and economic conditions in Western Europe are being reshaped by the new realities following the energy transition (*Energiewende*), in addition to the Russia-Ukraine conflict and the shortage of skilled workers, which has caused material prices and the cost of labor/energy to skyrocket in Germany. Therefore, although the design and use concepts might be transferable to other post-industrial cities in Europe and the US, planning regulations and construction costs are not (for the US, see Lane & Rappaport, 2020). Nevertheless, we consider the guiding principles of the productive city (Bundesministerium des Innern, 2020) to be highly compelling—particularly the emphasis on mixed-use development, short distances, local sourcing, and consumer-oriented provision, as well as the safeguarding of space for both high-tech and low-tech production adapted to current regulatory and environmental conditions. The commercial courtyard 2.0 (*Gewerbehof 2.0*) will contribute to creating and maintaining a livable, sustainable, and organic city. As demonstrated by experiences with publicly owned operating companies from Berlin in the past and other large German cities, however, long-term planning horizons need to be taken into account for such endeavors. Definitive declarations of intent have already

been made in planning documents (*Standentwicklungsplan Wirtschaft 2040*) and policies (political coalition treaty, *Koalitionsvertrag*).

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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 25.8.2). 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.

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