



A socio-spatial approach to the first legal hall dwelling setting in Switzerland: the case study of Hallenwohnen in Zurich

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Abstract

The study explores the collective settings of Hallenwohnen (hall dwelling) as a section of the Zollhaus settlement, which is the follow-up project by the Kalkbreite housing cooperative, functioning since January 2021 in Zurich, Switzerland. Hallenwohnen is the first legal hall cohousing arrangement in Switzerland. The private and semiprivate spaces of Hallenwohnen consist of a large open hall with collective basic structures and mobile residential towers (rollable spaces) as the core concept, which offer an affordable, self-managed/self-build, collaborative living and coworking arrangement in the center of Zurich. The qualitative case study method has been applied through the face-to-face semistructured interviews mainly with three occupants of Hallenwohnen as representatives of this residential community, in-situ observations, spatial investigations and document analyses. The theoretical framework of the study is grounded in the concept of collaborative housing. The results reveal that the innovative socio-spatial potentials of the collective spaces have been activated through the participatory intentions of the microcommunity and intended functional mix of the setting. Living as one collective household, multiplicity usage of hybrid spaces and the spatial activation of intermediate spaces have enabled participation-capable residential spaces and have resulted in optimal usage of housing spaces. Nonetheless, constraints and points of conflicts, which trigger the (re)negotiations and reinterpretations of the usage of collective housing spaces facilitate collective solutions of the residential community. A bottom-up initiative such as Hallenwohnen is helped along, through the long-term planning and top-down support of the cooperative housing model of Zurich.

Keywords Collaborative housing · Hall dwelling · Housings of cooperatives · Hybrid usage of space · Participation-capable housing spaces

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1 Introduction

This article studies Hallenwohnen as a part of the Zollhaus settlement, which is the second project by the Kalkbreite housing cooperative in Zurich, Switzerland. The housing cooperative model of Zurich, as a purpose-built collaborative social housing model, empowers residents to become involved in decision-making processes of their housing environments in different ways, such as participatory management of residential spaces, self-governed and autonomy, and even self-building practices. In cooperative housing ownership, residents contribute financially by buying shares for partial ownership and accordingly pay rents. The initiatives of housing cooperatives of Zurich catalyze “non-hierarchical decision making” and “non-speculative profits” (De Jorge-Huertas, 2020: 3–7) and are grounded on a culture of participatory building development. As such, housing cooperatives are the long-term providers of legal frameworks of affordable living in Zurich (Schmid, 2019a), while they receive assistance from Zurich municipality in having access to affordable land and are defined as non-profit organizations.

This study hypothesizes that microcommunity intervention as a purposeful integration of new models of housing processes in dense urban settings can provide the space for cocreating the residential spaces. To feed this hypothesis, the microcommunity, settled in Hallenwohnen and their housing spaces are investigated. The research is guided by the conceptual and theoretical frameworks of the *right to the city* (Lefebvre, 1968), criticism of the *process of mass means of housing production* (Habraken, 1972), the theory of *intermediate spaces* (Hertzberger van Vlijmen, 1995) and is grounded in the concept of *collaborative living* (Fromm, 1991). The inquiry, moreover, explores the European cooperative movement in its historical context, and through a more focused exploratory objective, it focuses on the cooperative development in Switzerland, specifically on the housing cooperatives of Zurich. Hallenwohnen as a pioneer contemporary participatory communal setting, is located not far from the former cultural squatted quarter of Wohlgroth¹ (from 1991 to 1993) in the center of Zurich. Large-scale squatting in the Wohlgroth quarter has been viewed as *non-hierarchical spaces*, where collective forms of living and working were tested (Kurz, 2017). It might not be a coincidence that Hallenwohnen is now included in its historical urban context in proximity to the city center.

Although, alternative household types and lifestyles are increasing in Switzerland (Hilti & Lingg, 2021), intentional residential collective settings are not practiced at large scales in Zurich, today. Yet, this study argues that innovative usage of space that promotes hybridity and temporary use are enabled through the maximum appropriation of available collective residential spaces of the case study. Moreover, outsourcing some decision making and responsibilities to the residential community stimulates points of (dis)agreements, which are discussed to make this collective housing arrangement tangible and to contribute to the advancement of knowledge in the collaborative housing research field. However, this study refrains from generalization of the results based on the scale of the study and the fact that the case study portrays a context-specific process.

¹ The former Wohlgroth factory in Zurich has been home to one of the largest squats in Swiss history. One hundred inhabitants benefited from a variety of publicly accessible facilities such as a *Volxküche* (a kitchen for communal cooking), an emergency shelter, a library and a cinema (Kries et al., 2017).

2 Research method

The qualitative case study methodology (Yin, 2014; Groat & Wang, 2013) is employed in this research. The empirical data of the research are gathered through in-depth semi-structured interviews, which are conducted by the researcher with three residents of Hallenwohnen with an age diversity between 26 and 42 who are single and married with children, on-site visits and observations from February to September 2021, accompanied by taking notes and descriptions, desktops and document analyses, and collecting architectural drawings and photos to investigate the socio-spatial specifications and interactions of the setting. The interviewees were selected through the *snowball* method in which the first interviewee as the president of the hall dwelling suggested the two other interviewees and residents.

The residential community of Hallenwohnen has settled in the studied collective residential arrangement since January 2021, while a number of the inhabitants (including one of the interviewees) have had twenty years of previous experience with hall cohousing in the former semi-legal projects.² The guiding questions for semistructured interviews and later coding the residential narratives have been in regard to the (1) intentions of the community for collective living, (2) spatial organizations, (re)arrangements, interactions and (re)negotiations of the inhabitants, and (3) the insights of the residents on the sustainability values and its related assumptions. The commentaries from the semi-structured qualitative interviews were collected in the face-to-face mode in Hallenwohnen during March 2021. The housing narratives of three inhabitants as representatives of the residential community recorded and further analyzed based on the theoretical framework of the study. Furthermore, onsite interviews enabled the formation of thick housing narratives, at the same time that left room for thought exchanges with more inhabitants of the studied hall dwelling during the course of the interviews. Moreover, Gehl (1996, 2004) highlights the need to base urban design on studies of how people actually experience and use urban environments, whilst direct observation is argued as a method through which “the investigators can achieve considerable insight into the actual use of designed places” (Cooper Marcus & Francis, 1998: 346). Accordingly, the direct observations of the setting are also based on the situation that the researcher has rented out a working desk as a free floater during three months of June, July and August 2021 in the collective arrangement of Hallenwohnen, inhabited by its micro-community and conducted the informal dialogues with the occupants of the studied collaborative housing and working spaces.

3 Theoretical framework

Henri Lefebvre in *Le Droit à la ville* (1968) proposed the concept of the right to the city, by which citizens and organizations are called to “reclaim the city as a co-created space” (Salama, 2019: 128). Correspondingly, in Zurich new models of collaborative housing have resulted in a sense of belonging to a community for residents and alternative architectural typologies, redefining urbanity by combining communal forms of living, working and cultural activities in developing the city as a social space. In this manner, a revival of community-oriented

² Former hall dwelling settings have been Labitzke site (1990s–2014) and Hohlzke project (2014–2018) in Zurich, Switzerland.

housing, which aims at setting standards for high-quality living environments has started to become popular again. Communal living as a “recurring phenomenon in the history of housing” can be considered as a “criticism of conventional living” and a “logical consequence of social development” (Schmid, 2019b: 19). Today in Zurich, communality of housing encompasses the contemporary changing lifestyles by rethinking housing typologies and forms that provide the possibility of sharing, particularly common facilities and spaces, enabled by strategies to sustain the community, to reduce floor space required per person, environmental gains and cost savings.

Fromm (1991) introduced the practice and concept of *collaborative communities*, which referred to various types of housing with shared facilities. Fromm (2012: 391) confirms that “collaborative living is an important and growing housing alternative”. Collaborative housing, is furthermore, interpreted by Vestbro (2010) as collective housing spaces and objectives, which enable collaboration among residents. On the other hand, Lang et al., (2018: 10) have argued that while the research on collaborative housing and the field itself is “thematically fragmented, with literature on different forms and models spread across disciplines and conceptual classifications”, it also has not considered “relevant housing models that [have] emerged very recently”. Respectively, Arroyo et al., (2021: 93) in their study of a new type of collaborative housing setting in Sweden highlight its potentials to offer “opportunities for residents to interact, socialize, integrate and bring about social change”. According to Khatibi (2022a: 197) “collaborative housing is a collaborative lifestyle and space in which social, design, and organizational aspects are incorporated”. Furthermore, collaborative housing as an *international movement* (Fromm, 2012), which is becoming an integrative and interdisciplinary new domain of research in the European context (Lang et al., 2018), incorporates cooperative housing (Czischke et al., 2020).

Collective living, furthermore, is always viewed as “a spatial and social interaction” (Schmid, 2019c: 14). Herman Hertzberger as a social thinker, rather than viewing physical space and social space as separate, has explored how buildings could enhance social interaction and communication through the provision of collective spaces such as intermediate spaces in which both social and structural aspects of space are viewed as crucial (Hertzberger & van Vlijmen, 1995: 15; Schmid, 2019c). Intermediate spaces are, as a result, the architectural tools with social functions that can facilitate social interaction and blur the boundaries between opposite spheres (Buchanan, 1987). Additionally, John Habraken in his book *Support: an Alternative to Mass Housing* (1972), has criticized mass housing since it reduces the dwelling to a consumer article and the dweller to a consumer. Habraken (1972) has argued for an alternative, by which the user is given control over the processes of dwelling. The “dwelling should enable us to perform certain actions ourselves” and to become empowered towards “new social relations, new dwelling forms, [and] new cities” (Habraken, 1972: 17, 75).

Collaborative housing models, are furthermore, considered as “alternative approaches to design, financing, management and community life in affordable housing” (van Bortel et al., 2019: 12). Likewise, housing cooperatives of Zurich act as an alternative to private tenures and market, which give residents little influence on design, price and management levels. The nature of collaborative housing and what it offers to the contemporary urbanized society through the lens of initiatives of housing cooperatives in Zurich, furthermore, render the framework of the discussions of this study.

4 Background to cooperative development in Switzerland

Historically, the question of communal habitation has been influential in shaping the cooperative vision. Cooperation, however, as a driving force of life has been present from ancient times in being and living, before getting introduced as a movement in housing. The cooperative movement emerged in the early 1800s in Britain and Europe with the goal of eliminating poverty in response to the extreme hardships of the people, who were facing the wealth accumulated in the hands of industrialists and aristocracy (Craig, 1993). The early nineteenth century British models known as the “Owenites and the Rochdale Pioneers” actually inspired the co-op movement worldwide (Hawley, 2019: 98).

At the outset, the cooperative spirit, which is deeply rooted in Swiss culture, has been a means to address collective challenges such as the difficult agrarian conditions of mountains and the economic instability of the industrial revolution (Hofer, 2019). In the mid-nineteenth century, self-help organizations were involved in the distribution of food in both rural and urban areas in Switzerland (Degen, 2017). For example, in 1839 in Schwanden, the rural area of the Glarus canton of Switzerland, a teacher started *Aktienbäckerei* (a joint-stock bakery) to supply healthy and affordable bread (Degen, 2017). The European cooperative movement became established by 1880 among the farm population and soon developed in Austria, Switzerland, and Italy (Craig, 1993). Consequently during the 1880s, agricultural and economic crises led to the development of agricultural cooperatives in Switzerland, Denmark, Iceland and Ireland. In Switzerland, cooperatives initiated to combine the purchase of artificial fertilizers, seeds, feed and implements (Jaggi, 1974). In 1863, Schwanden’s *Arbeiterverein* (Workers’ Association) was founded for food business based on Rochdale’s model, which was supported by textile industrialist Jean Jenny-Ryffel, who had seen England’s cooperative system on business trips (Degen, 2017). Later, this set a standard which the cooperative movement in Switzerland adopted widely. Conclusively, the agrarian cooperative model was established to accommodate the basic needs of an urbanizing society in Switzerland after the foundation of the Swiss modern nation state in 1848 and rapid industrialization in the second half of the nineteenth century (Hofer, 2019).

4.1 Housing cooperatives in Zurich, Switzerland

Born in 1907, a century-old non-profit housing cooperative of Zurich engage in developing and testing new forms of urban housing (Boudet, 2017; Guidarini, 2018; Hofer, 2019; Fig. 1).

Historically, reformers such as Charles Fourier and Robert Owen, who were known as the forefathers of the modern cooperation movement (Hawley, 2019; Vestbro & Horelli, 2012) and the “Utopian Socialists” (Engel et al., 2019: 22), were the first to attempt to unite social and architectural ideas in their plans for building utopian communities and their visions inspired many. Nonetheless, the successful implementation of communities was not realized and “these [historical] attempts to improve the tenement city for better housing for workers had no tangible effect” (Craig, 1993; Engel et al., 2019: 22). On the other hand, today’s postmodern, post-Fordist society is characterized by a dissolution of the traditional nuclear family and by an increase in different housing needs and alternative household forms (Sansen & Ryckewaert, 2021). This situation highlights the need for the non-monofunctional housing interventions in order to implement the mixture of functions and activities, the intensive usage of buildable land, the inclusion of the districts in

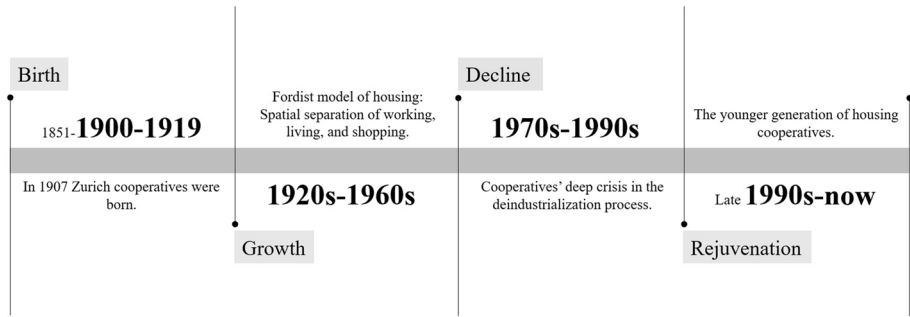


Fig. 1 Timeline infographic of housing cooperatives of Zurich, highlighting major phases (Source: Author)

the urban context, the innovative approaches to transportation to cut car dependency, typological diversity, housing affordability, and taking together, the visualization of sustainable development goals in the context of the built environment (Boudet, 2017; Hugentobler, 2017; Engel et al., 2019; Hofer, 2019; Schmid et al., 2019).

Currently, most housing cooperatives in Zurich support resident/citizen-led projects that aim to de-commodify housing from market forces and practice the collective community management and ownership. In Zurich over ninety percent of dwellings are rental apartments, while 125 housing cooperatives own twenty percent of this amount, which counts for 43,800 flats, while the largest cooperative possesses 5,000 dwellings. In order to become a part of a housing cooperative, a member buys a share, and therefore is entitled to vote (one person, one vote) and also has the right to rent. Cooperatives, also allow for 20–30% lower rents than in private tenures and building investments are made over a 90-year period (Hofer, 2019). Due to the multiplication of the projects, every new project of housing cooperatives has been an opportunity to analyze a new principle, trying to respond to the complex challenges of society by different residential concepts. By 2050 in Zurich, the share of the housings of cooperatives will be raised to 33% from 20%, which makes the quantitative and, nonetheless, qualitative growth of a post-industrial society and more sustainable forms of urban living possible (Hofer, 2019). Accordingly, novel ambitious cooperative developments, such as the Kalkbreite estate from 2014, the mehr als wohnen ensemble from 2015 and the very recent Zollhaus complex from 2020, have been realized by the new generation of housing cooperatives in Zurich.

5 Zollhaus complex, Zurich

The plot of land of the Zollhaus complex is centrally located in Kreis (District) 5 of Zurich, which belonged to the SBB³ and is sandwiched between the train track and Zollstrasse at the Langstrasse underpass. Located between the Limmat River and the train tracks in Zurich, District 5 is, moreover, known as the Industriequartier (industrial quarter). Actually, the Zollhaus complex unites districts 4 and 5 of Zurich together (Schmid, 2019d),

³ Schweizerische Bundesbahnen (Swiss Federal Railways).



Fig. 2 Zollhaus complex in Zurich, Switzerland (Source: Author)

while the complex does not function as an island and circulation is not restricted to just its residents.

In October 2012, the plot of land became available for sale among housing cooperatives of Zurich and Kalkbreite cooperative could purchase it in 2013 (Kalkbreite website).⁴ Accordingly, the urban plot remains the property of the non-profit cooperative with collective ownership structures of the residents. In 2013, innovative concepts were discussed with working groups and future users, upon which criteria for architectural competition based on *housing, community, commerce, culture, outdoor space and neighborhood and sustainability* were developed. The winning project in 2015 was Esperanto by the Zurich-based architectural office Enzmann Fischer Partner AG, which was followed by the pre-project processes in 2016, and the building permit was obtained in 2017, which led the path to construction from 2018 to October 2020.

The Zollhaus complex (Fig. 2), as a project with a very high degree of diversity of use that accommodates 175 residents and many jobs, has three main buildings (Table 1).

Building (A), Z 121; the *building of culture* (Küpfer, 2017: 9) with a core forum as a diverse usable space, serves as the main entrance at the corner of Zoll-/Langstrasse, which consists of a cultural restaurant and café, a theatre, a guesthouse, Flex⁵ rooms and boxes,⁶ reception, an inner courtyard with the hall dwelling and smaller loft apartments, residential flats, and the roof terrace with urban gardening areas (Fig. 3).

Building (B), Z 115/117, as a mixed-use building (Küpfer, 2017), also benefits from spaces such as shops, offices, Flex rooms, a common kitchen and a communal office, a

⁴ Das Zollhaus, Kalkbreite Cooperative, Available at: <https://www.kalkbreite.net/zollhaus/> [Accessed from 01.04.21–01.11.21].

⁵ Flex (flexible) rooms are unallocated rooms, which are available throughout the building and are rented out.

⁶ Boxes are unallocated rooms, which are available throughout the building and their usage is determined by the inhabitants.

Table 1 The Zollhaus Complex, Zurich (Elaborated by Author based on data at Kalkbreite website and Enzmann Fischer Architekten) (<https://www.minergie.ch/de/zertifizieren/eco/>)

Year of completion:	2020
Site area	5,000 m ²
Floor area	15,470 m ²
Functions and spaces	4,864 m ² - of flexibly useable dwelling and hall dwelling, 46 flats: 11 × 1.5-room flats; 9 × 2.5-room flats; 2 × 3.5-room flats; 7 × 4.5-room flats; 7 × 5.5-room flats; 6 × 6.5-room flats; 2 × 7.5-room flats; 1 × 8.5-room flats; 1 × 9.5-room flats 1 hall-concept apartment accommodation, 3 loft-concept apartments 6 joker rooms 400 m ² - of communal facilities 3,240 m ² - of communal roof terraces 3,470 m ² - of commercial and cultural spaces
Uses	Mixed-use housing, commercial and cultural development
Construction period	2/3 years
Environmental requirement	2000-Watt-society, Minergie-P-ECO-Standard

common washing room, residential flats, and the roof terrace. Building (C), Z 111, as a future-oriented building, is located at the corner of the plot and is planned for a kindergarten and offices with a roof garden, activated as a playground for the kindergarten. Other communal residential spaces have also been realized in the Zollhaus complex such as three communal housing spaces for the elderly, which include one shared apartment for seven older persons and two apartments each for three older individuals who want to live together.

5.1 Hallenwohnen in zollhaus complex, Zurich: hall cohousing as a form of collaborative living

The Kalkbreite cooperative engages in innovative forms of living and working in housing. In the Zollhaus project, the follow-up project of Kalkbreite cooperative, Hallenwohnen as a hall-concept apartment is developed in building A. In this building, the forum (Fig. 4), the core of the building as the “Urbaner Innenraum” (Guidarini, 2018: 132), stretches across three stories of the building, which extends the usable spaces.

For Hallenwohnen, which has been in function since January 2021, a basic structure (sanitary cells as well as basic kitchen installations) is provided in almost 600 m² (the large hall and 3 smaller loft-concept flats) on the third floor, with the rest to be built by future inhabitants (Boucein & Seidel, 2015). Hallenwohnen and the loft-concept apartments accommodate 27 residents (20 adults and 7 children), while the other floors in the Zollhaus project are dedicated to various communal, housing, cultural and commercial functions. In fact, the concept of Hallenwohnen as the large hall with height of “over one-and-a-half stories” originates from the “squatter scene in which personal housing landscapes are self-built within empty office buildings” (Schmid, 2019d: 268).

Hallenwohnen consists of a large hall with 275 m² for at least eleven persons, while three smaller loft-concept apartments with 327 m² for seven, five, and two persons are



Fig. 3 Roof-top as an urban gardening intervention, Building A, Zollhaus complex, Zurich (Source: Author)



Fig. 4 Core forum of building A, Zollhaus complex, Zurich (Source: Author)

developed on the third floor of building A. There are standard apartments of various layouts and roof-top extensions, Flex rooms, boxes combined in the Zollhaus project. Hallenwohnen, however, is a self-built residential/working communal space, which is complemented by spaces such as a central courtyard, a workshop, a communal laundry (laundry

Table 2 Semi-private and private spaces at Hallenwohnen (Source: Author)

Hallenwohnen spaces (275 m ²)	
Semi-private spaces (155 m ²)	Private spaces (120 m ²)
1 communal kitchen/dining	7 self-build rollable towers
4 shared bathrooms	2 fixed living studios
4 open atelier	
6 free floating spaces	

room is located in building B) and community storage (storage is located in the basement). Hallenwohnen, with a ceiling height of 4.15 m provides an alternative communal living, working, and cultural space. The large dwelling hall, as the core of Hallenwohnen with mobile residential towers (rollable spaces) offer a space of 275 m², of which 120 m² is allocated to private use and 155 m² for collective spaces (Table 2).

The large hall and the other smaller loft-concept apartments are connected through an inner courtyard, which acts as a buffer zone and effectively protects the inner areas from noise of the adjacent railway lines. In Hallenwohnen, a reduction per capita floor space in living area per resident has been considered, which is an endeavor to the densification strategy of the city and to reach the goal of the 2000-W-society⁷ in Switzerland. Thus, an average of 9 square meters per person as “Wohnturm-Äquivalenten/WTA” (residential tower equivalents) for the reduction of the consumption of private surface area, compared to the Swiss average of 45 square meters, is allocated in Hallenwohnen.

6 Findings and discussion

In Hallenwohnen, because of the modularity and mobility of the residential towers, they can be used flexibly, depending on the occupancy needs, preferences and event organizations. Furthermore, the private space is saved to develop communal spaces in the Zollhaus project. For Hallenwohnen, collective infrastructures such as the inner adjacent courtyard (100 m²), one workshop’s space (40 m²), four communal storage spaces (26 m²), a large collective kitchen (in building B), foyer, laundromat, box rooms, and roof terraces can be used for free by users of the hall dwelling. Moreover, guestrooms, Flex rooms, bicycle parking spaces can be rented out by residents. To respond to the various contemporary ways of life, new collective forms of living that accommodate multiple and changing lifestyles and households have been developed by younger generations of housing cooperatives in Zurich. Hallenwohnen is characterized by collective, self-determined living and working spaces, while diversity and solidarity among residents are enriched. An association of 11 inhabitants, aged between 4 and 54 years old, named zurwolke association, that is the further development of the hall dwelling on the Labitzke⁸ site forms the self-governed community of Hallenwohnen. From 2014 to 2018, the hall dwelling continued in the Hohlzke⁹

⁷ The 2000-W society, which targets reducing the current 6000 W per capita energy consumption in Switzerland by two-thirds by 2050 (Hugentobler, 2017).

⁸ The former Labitzke paint factory in Altstetten, Zurich was a social laboratory for new forms of living together from 1990s until its eviction in summer 2014 (Bärmann, 2020).

⁹ See <https://hohlzke.org/> [Accessed: 1.03.2021].

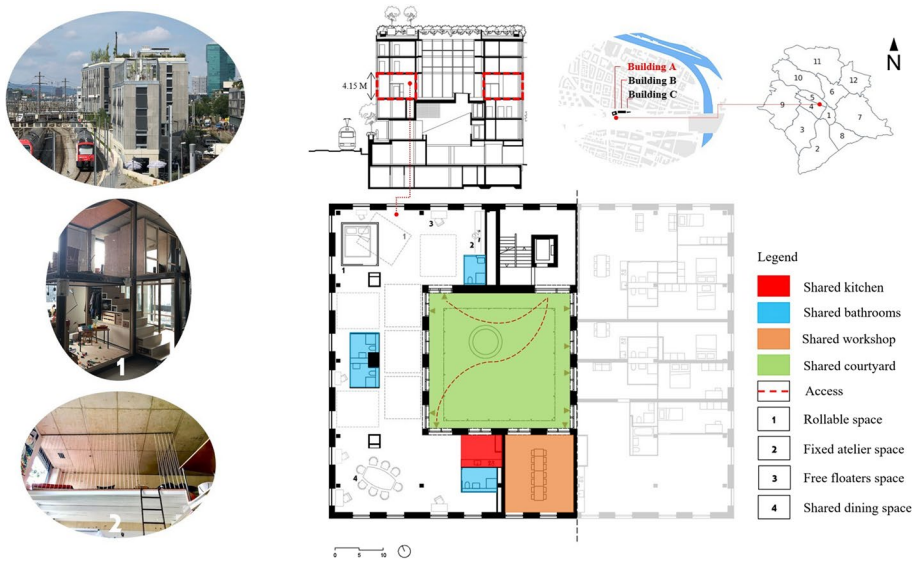


Fig. 5 Site plan, section of building A and Hallenwohnen’s plan, Zollhaus complex in Zurich (Elaborated by Author based on architectural plans by Enzmann and Fischer Architekten, Zurich)

Table 3 The self-build spaces in Hallenwohnen, Zollhaus complex, Zurich (Source: Author)

Type	Floor space	Users’ number	WTÄ (residential tower equivalents)
Residential tower (mobile)	9 m ² (two stories: 18 m ²)	7	1
Living studio (fixed)	9 m ² (one story: 9 m ²)	2	1/2
Open atelier	4.5 m ² (shared 9–18 m ²)	4	1/4
Free floating	Available co-working spaces	6	1/6

project in Zurich, where the concept of rollable spaces, communal living and working were further tested. In this manner, the zurwollke association in Hallenwohnen has created space for jointly organized life, working spaces, artistic and cultural work and for occasional public events. Each WTÄ (residential tower equivalents) usually consists of individual residents, families with different life models, artists and infrastructure users, whose members are jointly responsible for the common good and contribute to the administration, expansion and maintenance of the premises and the community (Fig. 5; Table 3).

6.1 Intentions of the community: an enabler of collaborative living

Hallenwohnen generates its own identity and a strong sense of collaborative living. For the residents of Hallenwohnen, communal living is a promise of added social value, simultaneously that collective goals are achieved. From the beginning, the intentions of the residents were as follows: a collective shared dwelling practice, connection to cultural events, support for the parents with kids in the community, sustainable usage of resources, communication and dialogue in the community, affordable living space in the center of city, the



Fig. 6 The collective kitchen in Hallenwohnen, Building A, Zollhaus complex, Zurich, (Source: Author)

culture of living and working together, alternative housing spaces as the self-build and self-determined spaces, access to generous communal spaces of the whole building and social cohesion (Interviews [01; 02; 03]). An interviewee mentions: “what interested me the most was about the form of living together, which is about my interest in sharing the common spaces and other ways of living” (Int. [02]). Hall cohousing in Zollhaus is perceived as living as one household. Therefore, the community does not consider itself as separate individuals but as one household like an extended family.

We have one kitchen (Fig. 6). We cook together, we buy together, we go to grocery shopping together. For sure, it is one household (Int. [02]).

In terms of eating together and sharing a lot of things that is similar to my experience with my family [in which I grew up]. We often eat together here [...] every time that I am sitting to dine I really enjoy it (Int. [03]).

Accordingly, Jarvis (2011: 561) highlights the need to address the social isolation of smaller households and the dissatisfactions that are addressed by “new social movements associated with communal dining”. One resident reflects that (Int. [03]): “It is really a gift. I cannot imagine how it would have been for me [isolated during the Covid-19 pandemic]. It is so important to have some people you can be close to and to connect and I had it because of here [hallenwohnen]”. Moreover, a crisis such as the Covid-19 pandemic, has called attention to the importance of residential spatial elements with socializing values (Arroyo et al., 2021). An interviewee of Hallenwohnen reports that:

The roof terraces [of Zollhaus complex] are super great spaces; there are fireplaces and you can do Corona-safe parties with different fireplaces and the views are very fantastic (Int. [01]) (Fig. 7).

Based on communication and weekly meetings, challenges and issues are discussed collectively among the residents of Hallenwohnen:

I like that Kalkbreite cooperative started the process of getting the people involved and the people who are living here get to meet each other and get to decide things together. I



Fig. 7 Shared roof-top, appropriated by the inhabitants during Covid-19 pandemic, building A, Zollhaus complex, Zurich (Source: Author)

enjoy being in contact with others and have opportunities. It is like a culture of discussion (Int. [01]).

In Hallenwohnen the collective spaces that function as socialization zones, facilitate the social cohesion of the residential community, while the collaborative appropriation of the dwelling and working spaces are facilitated by constant renegotiations. According to Fromm (2021, personal interview)¹⁰:

In collaborative housing, we need to understand that community is not an amenity. The process of collective housing has to be kept fueled in those housing projects, which is about continuous commitment.

The discussions and findings, thus, emphasize the value of both the committed community and collective spatial elements, where the hierarchization of shared spaces is regulated by inhabitants and their actions. Substantially, the collective perceptions and the appropriation of shared spaces, are constantly reinterpreted in accordance with the sociospatial conditions and requirements of the residential micro-community.

6.2 Improvisation of space: housing space as a process

Hallenwohnen's space lends itself towards fixed installations and rollable spaces in which functionality and usability of the floorplan are central. The testimonies from the residents shed light on the origins for rollable towers (spaces) and the concept:

¹⁰ Personal zoom interview with Dorit Fromm conducted on [14.04.2021] by the researcher. Dorit Fromm is an American design researcher and architect, who first described the concept and models of collaborative housing in her book *Collaborative Communities: Cohousing, Central Living, and Other New Forms of Housing with Shared Facilities* (1991).

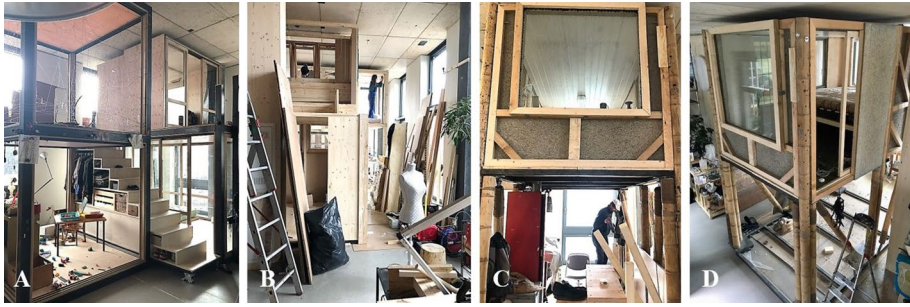


Fig. 8 Self-built rollable residential spaces in Hallenwohnen, Zollhaus complex, Zurich (Source: Author)

One thing is that, because of the height of the ceiling in the hall, it is not allowed to make two-storey fixed rooms. But, as long as this is not a room but a furniture, it is allowed and it is a furniture as long as it is mobile. So, it is like furniture that you live in. The other thing is that we enjoy a lot to create the room and once we finish building it, we still have a lot of options to create rooms by changing the landscape. In our former project, the idea was to get all the rooms to one side and we had one free big space to make a party or have a public event by having more space (Int. [01]).

In our case, here, the concept is very strong. The people have lived with this concept for a while and developed it. It took them a long journey. This concept of hallenwohnen is so strong that it has adapted to the space here. The concept is stronger than the whole space of the hall. The concept is so strong that the architecture is secondary. The approach is to really self-build. Community is more important than the architecture. We really create space here and it is in addition to our community, which is an extra value (Int. [02]).

Hallenwohnen as a contemporary form of collaborative living puts different demands on living conditions and the urban environment, which in turn provide the space for reclaiming the residential space in a cocreating process (cf. Lefebvre, 1968; Salama, 2019). The collective spaces in Hallenwohnen, moreover, have activated *intermediate spaces* (Hertzberger & van Vlijmen, 1995) for temporary social, cultural, artistic activities and working usages. In addition, this form of temporary and hybrid usage of space has been created in the absence of commercial and marketing developments. The term hybrid denotes that the residential use is combined with “common-shared spaces” (De Jorge-Huertas, 2018: 283). This kind of temporary multiplicity usage of space is further characterized by the bottom-up approaches and creative initiatives of the inhabitants (Guidarini, 2018: 128; Schmid, 2019d). In reference to the multifaceted and hybrid usage of space, an inhabitant of Hallenwohnen recalls from their former project, while envisioning that these activities will happen in the Hallenwohnen setting (Int. [01]):

In the former project, this was my interest and biggest pleasure to see that you can make cultural events in the hall. The concept is very particular. There were already 20 people in the house, who were bringing their friends. So, we had a big public looking at the cultural events: for example Japanese dance. The public was not coming just for the dance, but for the place. How could we have a mix of people? How could we have these easiness to have normal people watch art and then talk to them, and we did it all possible. It was so fantastic. People got really involved and helped us. What we really feel here is that doing something together like making something possible and having a vision together and experience it and having fun together is making the group so strong. It can be about the building but it is of course about the culture.

The spatial activation of intermediate spaces in Hallenwohnen have mobilized not only the dwelling and working spaces but also cultural events. Relatedly, a resident calls the housing process in Hallenwohnen a growth process: “It is very interesting with my room to have the possibility to see how it is growing. You can experience each step, and that is something that you have never had the possibility to experiment (Int. [02]) (Fig. 8).

6.3 Shared residential space: the sustainable way of living

Moreover, in Hallenwohnen household appliances and tools are shared among residents, and the sharing of space and resources adds a sustainable value to communal life practice. A resident puts forward that: “when you are living by yourself, you take some food into trash, but here we consume all the food” (Int. [03]).

We share food and stuff. We think here that you live in a house, but you are at work all day and then your house is empty, then you go back to your house and then your work place is empty. So, to actually get the two together is a really great idea and sustainable. Additionally, working materials that one uses, such as expensive construction materials for windows and doors, we apply used materials. We have great experience of finding used material and things that are cheap and free (Int. [01]).

Actually, collective housing practice connects housing, resources and responsibility of sustainable usage of materials at a larger scale. According to Jarvis (2011), innovations and experiments in collective housing settings offer an approach to living patterns, which promote future sustainability. This issue is coupled with the sustainable usage of residential space by reducing the amount of private space consumed by occupants (Prytula et al., 2020). In Hallenwohnen, the share of an individual’s space consumption is limited to just 9 m², which is 1/5 of the standard average of per capita living floor space in Zurich. Moreover, it is argued that placing home as a space that “integrates alternative functional understandings that facilitate practices contributing to [...] lowering consumption levels [...] and sharing both resources and space more efficiently” transforms home as “a major node in everyday life” as a crucial starting point (Hagbert & Bradley, 2017: 246). This discussion, as Hagbert and Bradley (2017: 247) propose, can be framed as “living with less” that can inspire insights into how narratives of “low-impact living” can be shaped and how home can function as an experimental platform to learn and develop skills “on one’s own as well as through mutual inspiration and interaction with others”. On the other hand, there is a need to problematize the points of conflicts, which appear to characterize the residential spaces, which are ruled and operated collectively.

6.4 Constraints and conflicts: pushing creativities and readjustments

Collective living offers possibilities and points of conflicts for residential communities. In Hallenwohnen, the regulations of the buildings have created some constraints for the self-built activities. According to an occupant:

The floors in the hall are slightly sensitive to the needs and the ceiling could be slightly higher; thus, it could be easier to build towers. The bathrooms are not situated in the perfect place [two bathrooms are situated in the middle of Hall that interfere with the construction of private spaces]. The transparency and the way that light comes through for some parts are also different. We have many constraints in regard to the hall concept (Int. [02]).

According to Schmid (2019d: 268), “integrating this often illegal type of appropriation [Hallenwohnen] into a legal building process such as the Zollhaus project requires a great

deal of assertiveness and, due to building regulations and the limited financial resources of future residents, must be continually readjusted". On the other hand, the residents argue that the constraints push their creativity and make them find solutions to deal with the situations (Ints. [01; 02;03]). A former inhabitant¹¹ of the hall dwelling setting from Hohlzke project in Zurich argues that:

In hall dwelling you first need to build your own room. In hall dwellings, the bathrooms are always shared. This can lead to conflict, as people have different standards of hygiene and cleaning regularities. Noise and sound proofing was terrible in self-rolled spaces in [the previous] hall dwelling in general.

In regard to the noise effect on comfort level in the current project in Hallenwohnen, an occupant discusses that the noise level cannot be controlled at the moment in Hallenwohnen, because residents are busy building their towers. The resident continues that, however, "I do not have a problem with noise, I like to hear some people are talking at the background and I can concentrate more. I am not irritated by noise" (Int. [02]). Furthermore, in reference to sanitation level of the shared bathrooms, an occupant states that (Int. [03]):

For me the rule is that, when the bathroom is dirty, you can clean it. We are now slowly moving to living together, from constructing and planning together, and we often have meetings and these topics are slowly getting ruled.

According to the decoded interviewed data of the occupants of Hallenwohnen, the *greater scope for mutuality, cooperation, reciprocity and exchange* (Jarvis, 2011) in comparison to the conventional households, the *constant (re)negotiations* for the appropriation of the collective spaces that are ruled by the community (Schmid, 2019e) and the activation of the *intermediate spaces* (Hertzberger & van Vlijmen, 1995) are viewed as successful tools in maintaining the cohesive socio-spatial dynamics (Khatibi, 2022b) of a collaborative housing arrangement.

On the other hand, a resident of Hallenwohnen pinpoints that "this always being social can be quite tiring sometimes", because "we often eat together and it is something I have to get used to, sometimes it can take a lot of energy also" (Int. [03]). Furthermore, another resident of Hallenwohnen argues that (Int. [01]):

A misunderstanding that we hear a lot is that some people say "I need my private space and because you do not have it here, I couldn't live like that". However, I do have my boundaries. All people living here have their own boundaries. We are not the people that are different from other people. It is also important to not take reactions personal here; if you realize it is too much you often start not looking at people and people should not take this personal. Because it is not about them and should not get annoyed. It is about the need to have privacy at that time.

From a socio-spatial point of view, hall cohousing has challenged the conventional forms of housing, while the narratives of interviewed inhabitants further challenge the norms, widening the potential of the urban house beyond its conventional borders. Although intentional collaborative housing settings are not viewed as large-scale solutions to housing problems, they provide alternative housing narratives to be acknowledged in envisioning the urban future.

¹¹ The interview with the former resident of the hall dwelling setting from Hohlzke project conducted by the researcher via Zoom on [18.03.2021].

7 Conclusion

This paper has addressed some potentials and constraints of a hall dwelling setting as a form of *collaborative living* (Fromm, 1991) by approaching the residential spaces of Hallenwohnen in Zurich and by presenting narratives from its residential community. In this manner, the study has aimed to contribute to a growing research field of collaborative housing in Europe, which broadens the discourses on contemporary intentional collaborative housing arrangements. The research has endeavored to portray how a new form of urbanized house by purposeful integration of the micro-community, can function in a contemporary context. The socio-spatial interactions of the inhabitants of Hallenwohnen are enabled through hybrid housing spaces as spaces of (re)negotiations and solidarity. As a matter of fact, Hallenwohnen has been evolved through a path dependent process and engagement of future inhabitants in the production of their housing, as opposed to the *process of mass housing* (Habraken, 1972, 2019). Hallenwohnen, furthermore, allows a greater degree of flexibility for residents to shape their own home, which opens up the possibilities to the concept of the *right to the city* by a mix of innovative and collaborative approaches.

Additionally, Hallenwohnen portrays a bottom-up initiative, which is helped along by top-down support of the Kalkbreite housing cooperative in Zurich. Correspondingly, the historical awareness of the cooperative movement in 1818 through the elaborate concept of Robert Owen, the *New Harmony*, has highlighted that the community is an existence that cannot be manufactured but needs to be nurtured. On the other hand, today a majority of middle-class user inhabitants have established themselves in current collaborative models in the context of housing cooperatives of Zurich. While targeting middle-class users are considered as a success factor of the housing cooperatives of Zurich (Balmer & Gerber, 2017), the overview of the European cohousing and cooperative housing literature has come to the same understanding that the majority of these housing models often accommodate middle-class households (Tummers, 2015; Thörn et al., 2020).

Nonetheless, the straightforward translation of a housing model such as Hallenwohnen, abroad might experience challenges and limits of transferability. The reasons can be due to the context-dependent mechanisms and the fact that the residential communities as the crucial elements cannot be exported. However, “context-dependent knowledge plays an important role” in urban planning and research (Andersen & Kirkeby, 2021: 159). Eventually, suchlike situation-based practices that can compensate for higher densities and increased housing prices in the urban context can offer opportunities for the urban society in the twenty-first century.

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Declarations

Conflict of interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

- Andersen, H.T., and Kirkeby, I.M. (2021). *Barriers and Potentials of Interprofessional Planning, Creating Care Homes for People with Dementia*, in: Fokdal, J., Bina, O., Chiles, P., Ojamäe, L., Paadam, K. (Eds.), *Enabling the City: Interdisciplinary and Transdisciplinary Encounters in Research and Practice*, Routledge, Taylor & Francis Group, New York, London, pp. 155–165.
- Arroyo, I., Montesino, N., Johansson, E., & Yahia, M. W. (2021). Social integration through social connection in everyday life. Residents' experiences during the COVID-19 pandemic in SällBo collaborative housing, Sweden. *Archnet-IJAR: International Journal of Architectural Research*, 15(1), 79–97. <https://doi.org/10.1108/ARCH-10-2020-0236>
- Balmer, I., & Gerber, J. (2017). Why are housing cooperatives successful? Insights from swiss affordable housing policy. *Housing Studies*, 33(3), 361–385. <https://doi.org/10.1080/02673037.2017.1344958>
- Bärmann, D. (2020). *Labitzke Farben: Archäologische Untersuchung einer (Stadt)utopie*. Zürich: Hochparterre.
- Boucein, B., and Seidel, T. (2015). "Open Building as a Principle of Cooperative Housing: The Case of Switzerland". *Proceedings of the Future of Open Building Conference*, ETH Zürich. DOI: <https://doi.org/10.3929/ethz-a-010577351>
- Boudet, D. (Ed.). (2017). *New Housing in Zurich, Typologies for a Changing Society*. Park Books.
- Buchanan, P. (1987). Three dutch architects: Herman hertzberger / koen van velsen / rem koolhaas. *AA Files*, 16, 7–22.
- Cooper Marcus, C., & Francis, C. (1998). *People Places: Design Guidelines for Urban Open Space*. John Wiley & Sons.
- Craig, J., & G. (1993). *The Nature of Co-operation*. Black Rose Books.
- Czischke, D., Carriou, C., & Lang, R. (2020). Collaborative housing in europe: Conceptualizing the field. *Housing Theory and Society*, 37(1), 1–9. <https://doi.org/10.1080/14036096.2020.1703611>
- De Jorge-Huertas, V. (2020). Collaborative designing of communities: Helsinki and Zurich Pioneers. *ACE: Architecture, City and Environment*, 15(43), 9012. <https://doi.org/10.5821/ace.15.43.9012>
- De Jorge-Huertas, V. (2018). Mat-hybrid housing: Two case studies in Terni and London. *Frontiers of Architectural Research*, 7(3), 276–291. <https://doi.org/10.1016/j.foar.2018.05.002>
- Degen, B. (2017). "Consumer Societies in Switzerland: From Local Self-help Organizations to a Single National Co-operative". Hilson, M., Neunsinger, S., Patmore, G., (Eds.), *A Global History of Consumer Co-operation since 1850: Movements and Businesses*, Brill, Boston, pp 614–641.
- Engel, B., Frantseva, Y., Malko, A., & Rogge, N. (2019). *Mass housing in the socialist city: Heritage, values, and perspectives: Case studies in Germany, Russia, and Ukraine*. DOM publishers.
- Fromm, D. (1991). *Collaborative Communities: Cohousing, Central Living, and Other New Forms of Housing with Shared Facilities*. Van Nostrand Reinhold.
- Fromm, D. (2012). Seeding community: Collaborative housing as a strategy for social and neighbourhood repair. *Built Environment (1978)*, 38(3), 364–394.
- Gehl, J., and Gemzoe, L. (1996). *Public Spaces. Public Life. The Danish Architectural Press and Royal Danish Academy of Fine Arts*, School of Architectural Publishers, Copenhagen, Denmark.
- Gehl, J., and GehlArchitects, (2004). *Towards a Fine City for People, Public Spaces and Public Life*, Gehl Architects.
- Groat, L. N., & Wang, D. (2013). *Architectural Research Methods*. Wiley.
- Guidarini, S. (2018). *New Urban Housing: L'abitare Condiviso in Europa*. Milano: Skira.
- Habraken, N., & J. (1972). *Supports: An Alternative to Mass Housing*. Architectural Press.
- Habraken, N., & J... (2019). *Supports: An Alternative to Mass Housing*. Routledge.
- Hagbert, P., & Bradley, K. (2017). Transitions on the home front: A story of sustainable living beyond efficiency. *Energy Research & Social Science*, 31, 240–248. <https://doi.org/10.1016/J.ERSS.2017.05.002>
- Hagbert, P., Larsen, H. G., Thörn, H., & Wasshede, C. (Eds.). (2020). *Contemporary Co-Housing in Europe, Towards Sustainable Cities?* Routledge, london:New York
- Hawley, J. (2019). Housing Co-ops: Citizen Control or Social Service. In J. Hawley & D. Roussopoulos (Eds.), *Villages in Cities: Community Land Ownership, Cooperative Housing, and the Milton Parc Story* (pp. 98–117). Black Rose Books.
- Hertzberger, H., and van Vlijmen, M. (1995). *Das Unerwartete überdacht: Herman Hertzberger: Projekte/projects 1990–1995*, Verlag 010 Publishers, Rotterdam.
- Hilti, N., & Ligg, E. (2021). Gemeinschaft selbst bauen: Eine studie über neue wohnkonzepte jenseits des standards. *Soziale Passagen*, 13, 447–452. <https://doi.org/10.1007/s12592-021-00397-y>
- Hofer, A. (2019). *Utopian Pragmatism, Grass-roots Urban Movement Rejuvenating the Swiss Housing Cooperative Tradition*, in: Ledent, G., Salembier, Ch., Vanneste, D., (Eds.), *Sustainable Dwelling:*

- Between Spatial Polyvalence and Residents' Empowerment*, Drifosett Printing SA., Brussels-Belgium, pp. 023–047.
- Hugentobler, M. (2017). *Switzerland*, in: Pareja-Eastaway, M., Winston, N., (Eds.), *Sustainable Communities and Urban Housing: a Comparative European Perspective*, Routledge, Taylor & Francis Group, London, pp. 203–224.
- Jaggi, E. (1974). *Agricultural Co-operatives and Associations in Switzerland*. The Plunkett Foundation for Co-operative Studies.
- Jarvis, H. (2011). Saving space, sharing time: integrated infrastructures of daily life in cohousing. *Environment and Planning*, 43(3), 560–577. <https://doi.org/10.1068/a43296>
- Khatibi, M., (2022a). *Adequate Urban Housing: Case Studies of Novel Settlements of Housing Cooperatives in Zurich, Switzerland. Intermediate Spaces: Enablers of Social Connection*. PhD Thesis, Department of Architecture and Urban Studies (DASu), Politecnico di Milano.
- Khatibi, M. (2022b). Socio-spatial interactions of a cluster-house concept apartment in mehr als wohnen project in Zurich, Switzerland. *Frontiers of Architectural Research*, 11(2), 191–202. <https://doi.org/10.1016/j.foar.2021.10.002>
- Kries, M., Müller, M., Niggli, D., Ruby, A., & Ruby, I. (2017). *Together!: The New Architecture of the Collective*. Vitra Design Museum Ruby Press.
- Küpfer, E. M. (2017). *Kulturgenossenschaft Zollhaus: Ein Genossenschaftlich Getragenes, Partizipatives Gesamt-Kulturkonzept für das Zollhaus (Businessplan)*. Hochschule Luzern: Abschlussarbeit Kulturmanagement Praxis.
- Kurz and (2017). Von der Krise zur Blüte: Hintergründe zum besonderen Aufschwung des Zürcher Wohnungsbaus um 2000 = From Crisis to Revival, Background to the Housing Boom in Zurich around, , 2000Kurz, D. (2017). *Von der Krise zur Blüte: Hintergründe zum besonderen Aufschwung des Zürcher Wohnungsbaus um 2000 = From Crisis to Revival, Background to the Housing Boom in Zurich around 2000*, in: Wirz, H., Wieser, Ch., (Eds.), *Zürcher Wohnungsbau: 1995-2015; Zurich Housing Development: 1995-2015*, Quart Verlag, Luzern, pp. 14-23.
- Lang, R., Carriou, C., & Czischke, D. (2018). Collaborative housing research (1990–2017): A systematic review and thematic analysis of the field. *Housing, Theory and Society*, 37(1), 10–39. <https://doi.org/10.1080/14036096.2018.1536077>
- Lefebvre, H. (1968). *Le Droit à la ville*. Anthropos.
- Prytula, M., Rexroth, S., Lutz, M., & May, F. (2020). *Cluster-Wohnungen für Baulich und Sozial Anpassungsfähige Wohnkonzepte einer Resilienten Stadtentwicklung*. Fraunhofer IRB Verlag.
- Salama, I. (2019). Social Production of Habitat: The Emergence of a Paradigm Shift in the Making of Cities. In J. Hawley & D. Roussopoulos (Eds.), *Villages in Cities: Community Land Ownership, Cooperative Housing, and the Milton Parc Story* (pp. 122–129). Black Rose Books.
- Sansen, J., & Ryckewaert, M. (2021). *Collective housing: A new habitat for living in Brussels*. VUB Press.
- Schmid, S. (2019c). *Models of Shared Living: Context and Overview*, in: S., Schmid, D., Eberle, M., Hugentobler, (Eds.), *A History of Collective Living: Models of Shared Living*, Birkhäuser, Basel, pp. 10–14.
- Schmid, S. (2019a). *Summary*, in: Schmid, S., Eberle, D., Hugentobler, M. (Eds.), *A History of Collective Living: Models of Shared Living*, Birkhäuser, Basel, pp. 293–306.
- Schmid, S. (2019b). *Motives that Drive Shared Living*, in: S., Schmid, D., Eberle, M., Hugentobler, (Eds.), *A History of Collective Living: Models of Shared Living*, Birkhäuser, Basel, pp. 19–22.
- Schmid, S. (2019). Zollhaus Residential and Commercial Building. In S. Schmid, D. Eberle, & M. Hugentobler (Eds.), *A History of Collective Living: Models of Shared Living* (pp. 268–271). Basel: Birkhäuser.
- Schmid, S. (2019). Co-living as Interconnected and Decentralized Housing. In S. Schmid, D. Eberle, & M. Hugentobler (Eds.), *A History of Collective Living: Models of Shared Living* (pp. 272–274). Basel: Birkhäuser.
- Schmid, S., Eberle, D., Hugentobler, M. (Eds.) (2019). *A History of Collective Living: Models of Shared Living*, Birkhäuser, Basel.
- Thörn, H., Larsen, H.G., Hagbert P., Wasshede, C. (2020). Co-housing, Sustainable Urban Development and Governance, in: Hagbert, P., Larsen, H.G., Thörn, H., Wasshede C. (Eds.) *Contemporary Co-Housing in Europe, Towards Sustainable Cities?* Routledge, London and New York.
- Tummers, L. (2015). The re-emergence of Self-managed co-housing in Europe: A critical review of co-housing research. *Urban Studies*, 53(10), 2023–2040. <https://doi.org/10.1177/0042098015586696>
- van Bortel, G., Gruis, V., Nieuwenhuijzen, J., Pluijmers, B. (Eds.) (2019). *Affordable Housing Governance and Finance: Innovations, Partnerships and Comparative Perspectives*. Routledge, London.
- Vestbro, D.U. (Ed.) (2010). "Living Together – Cohousing Ideas and Realities Around the World". *Proceedings from the International Collaborative Housing Conference*, Royal Institute of Technology, Stockholm.

- Vestbro, D. U., & Horelli, L. (2012). Design for gender equality: The history of co-housing ideas and realities. *Built Environment (1978)*, 38(3), 315–335.
- Yin, R., K. (2014), *Case study Research: Design and Methods*, Sage, Los Angeles.

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