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Stender, Marie; Nordberg, Lene Wiell

Veröffentlichungsversion / Published Version

Zeitschriftenartikel / journal article

#### Empfohlene Zitierung / Suggested Citation:

Stender, M., & Nordberg, L. W. (2022). Learning From Covid-19: Social Infrastructure in Disadvantaged Housing Areas in Denmark. *Urban Planning*, 7(4), 432-444. <https://doi.org/10.17645/up.v7i4.5687>

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Article

## Learning From Covid-19: Social Infrastructure in Disadvantaged Housing Areas in Denmark

Marie Stender\* and Lene Wiell Nordberg

Department of the Built Environment, Aalborg University, Denmark

\* Corresponding author ([mste@build.aau.dk](mailto:mste@build.aau.dk))

Submitted: 28 April 2022 | Accepted: 5 September 2022 | Published: 22 December 2022

### Abstract

The Danish post-war housing areas originally epitomised the dawn of the welfare state, with modern housing blocks organised as enclaves surrounded by open green spaces, promoting ideals like hygiene, light, fresh air, equity, and community. Often, these housing areas were developed in vacant lots in suburban areas, and social infrastructure planning was an essential part of stimulating the sense of community with centrally located community centres and other common facilities. Due to segregation, some of these housing areas have become disadvantaged neighbourhoods, and the Danish state has recently introduced new measures, including demolitions and evictions, to transform the areas and increase their social and functional mix. The social infrastructure of these areas has traditionally been a physical framework for organised social activities and social support for socially disadvantaged citizens, facilitated by professionals. However, during the pandemic lockdown, shared physical facilities were temporarily closed and all organised social activities cancelled, thus rendering visible critical aspects of social infrastructure that may normally be taken for granted or remain unnoticed. Yet the pandemic also activated communities in new ways, making visible more informal and ad hoc social infrastructure with new communication channels, practical help among neighbours, and community singing from balconies. Based on recent architectural-anthropological field studies in a range of disadvantaged housing areas in Denmark, this article locates social infrastructure during the time of Covid-19. It discusses the potential of mapping existing social networks and suggests a more differentiated view through three levels of social infrastructure learning from the pandemic's emergency period.

### Keywords

communities; Covid-19; Denmark; disadvantaged neighbourhoods; housing areas; informal networks; regeneration; social infrastructure

### Issue

This article is part of the issue “Localizing Social Infrastructures: Welfare, Equity, and Community” edited by Ebba Högström (Blekinge Institute of Technology), Lina Berglund-Snodgrass (Swedish University of Agricultural Sciences), and Maria Fjellfeldt (Dalarna University).

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### 1. Introduction

The Covid-19 pandemic was not equally distributed among neighbourhoods and communities in Denmark. For example, a study shows that citizens living in the Danish disadvantaged housing areas had a three times higher presence of antibodies after Covid-19 compared to the general Danish population (Fogh et al., 2022, p. 2). The high infection rates repeatedly peaked in several of the disadvantaged housing areas, causing long-term

closures of schools, daycares, and community centres. Many of these housing areas were built during the heyday of the welfare state, often by leading architects of their time. Today, 60 years later, views about these areas have changed radically, and some of them have instead been stigmatised in the public and political debate, dubbed “ghettos” or “parallel societies.” Since 2010, the Danish government has annually published a list of so-called “parallel societies” of social housing areas comprising more than 1,000 residents and with a

high share of residents with non-Western ethnic backgrounds; low employment, education, and income; and high criminal conviction rates. In 2018, a new legislation called the Parallel Society Agreement (PSA) was passed, introducing new measures such as evictions, tenure mix, and targeted demolition aimed at opening these areas towards the surrounding society and obtaining a more socially balanced composition of residents. In the Danish context, this new approach to regeneration is based on the idea of transforming the areas' social dynamics by changing their physical design, housing types, and ownership. According to the PSA, the share of social housing in the areas included on "the list of parallel societies" must be reduced from 100% to 40% before 2030. This is done by way of extensive regeneration including demolition and densification, as well as the sale of existing housing blocks. Such approaches to regeneration have been substantially criticised and discussed in international research literature revolving around concepts such as social mix and social sustainability (Kjeldsen & Stender, 2022; Lelévrier, 2013; Ostendorf et al., 2001), state-driven gentrification (August, 2014; Lees, 2008; Tunström, 2019), and territorial stigmatisation (Arthurson, 2013; Jensen & Christensen, 2012; Wacquant, 2007). However, this large body of social science research is rarely preoccupied with spatial planning and built environment and is seldom linked to architectural and planning research on post-war social housing (Swenarton et al., 2014). This article aims to bridge that gap, as there is a need for thorough insight into the relationship between physical environments and social life in the disadvantaged housing areas that are currently being transformed. A focus on social infrastructure is particularly relevant as it helps recognise overlooked and undervalued spaces and networks that are quintessential for local social life (Latham & Layton, 2019). Though Covid-19 has had many unfortunate consequences in these areas, the lockdowns also offer a seldom insight into the functioning of such spaces and networks.

Based on architectural-anthropological field studies (Oz & Staub, 2019; Stender et al., 2022) in disadvantaged housing areas in Denmark, we will in this article localise social infrastructure during Covid-19 and discuss what lessons can be learned from the pandemic's period of emergency. With their influential book *Learning from Las Vegas*, Venturi et al. (1977) introduced a new approach to analysing current city phenomena in modernist architecture and planning. This work arose from an interest in understanding the consequences of the post-war areas in a broader context than merely the built environment and showed how architects and planners could learn from the habits and values of ordinary people, rather than focussing on the monumental works and heroic intentions of modernist architecture. Inspired by this approach, this article examines the relationship between social life and physical design in three post-war residential areas through the concept of social infrastructure.

The empirical basis of the analysis is a long-term evaluation of regeneration efforts in the 15 areas included in the PSA-related regeneration schemes. The evaluation follows the 15 areas over a period of 10 years (2018–2028) by way of recurrent field studies every second or third year in each of the 15 areas. As part of the field studies in each area, we conduct surveys among residents and other users, 20 to 30 in-depth qualitative interviews with residents, representatives of the housing organisations, community social workers, and other professionals involved in the regeneration, as well as observations of daily life in the areas, including mapping and registrations of the spatial layout and urban activity in common spaces. The methodological approach is architectural-anthropological as it merges mapping and registration of spatial aspects with insights from the surveys, interviews, and observations. Hence, we connect findings related to how people experience and use their neighbourhood to the mapping and analysis of the specific spaces where these experiences and practices occur. Furthermore, the evaluation includes recurrent media analysis registering all articles in local, regional, and national newspapers mentioning each area over 12-month periods to monitor changes in their place reputation. The methods and results of the broader field studies and media analyses including the relationship between territorial stigmatisation, residents' perspectives, and current architectural approaches to regeneration have been discussed elsewhere (Mechlenborg & Stender, 2022; Nordberg & Sundstrup, 2021; Stender & Mechlenborg, 2022). In this article, we will concentrate on the learnings from the Covid-19 lockdown and only focus on three of the 15 housing areas—namely Ringparken, Sundparken, and Mjølnerparken—as we conducted field studies during the lockdown in these case areas. The research design of our field studies was thus originally not focused on Covid-19, but rather on investigating how the regeneration processes and architectural transformations of these areas affect their social life, place reputation and relationship to the surrounding city. Our research methods are however predominantly qualitative and explorative, and we, therefore, realised that it was important to also take a closer look at the effects of the pandemic lockdown, as it played a considerable role in our interviews and observations. The lockdown of course interrupted and complicated our field studies: All interviews had to be conducted outdoors, via phone or online, and all the meetings and events for residents in which we would have normally participated as part of the fieldwork were cancelled.

To further qualify our findings relating to Covid-19, we also conducted follow-up interviews with representatives of the housing associations and tenants' boards of the three areas in the spring of 2022, focusing on what can be learned from the pandemic period. The analytical procedure was based partly on the coding of all data from the field studies relating to Covid-19 and lockdown, and partly on diagrammatic drawings

accentuating various spatial aspects of the housing areas. The analytical insights thus grew out of the process of moving back and forth between these two strands of empirical detail and key theoretical concepts. The first part of the article outlines our approach to the concept of social infrastructure, advancing existing research on social infrastructure in disadvantaged neighbourhoods related to studies on the consequences of Covid-19 lockdowns. The case-analysis mapping social infrastructure in each of the three areas during the pandemic follows. Finally, we identify and discuss transversal insights in the concluding discussion.

## 2. State of the Art: Social Infrastructure, Disadvantaged Neighbourhoods, and Covid-19

The concept of infrastructure has been a part of social and urban research since the mid-1990s. Latham and Layton (2019) argue that the concept of infrastructure evolves from a limited concept dealing mainly with technological networks and systems supporting urban structures to a broader understanding addressing social, economic, cultural, and political issues. Star (1999) states that infrastructure not only deals with material entities and systems, but also relates to organised practices, norms, and routines. Furthermore, Star (1999, p. 382) advocates that infrastructure is an integral but often invisible part of human organisation and the built environment and that the infrastructure systems often only become visible if something goes wrong or the system breaks down.

Klinenberg (2018), among others, expands on Star's definition and adds the concept of social infrastructure as an essential concept focusing on the different kinds of facilities necessary for cities to function as social spaces. According to Klinenberg (2018, p. 9), "social infrastructure is crucially important, because local, face-to-face interactions—at the school, the playground, and the corner diner—are the building blocks of all public life." He argues that a well-functioning social infrastructure can contribute to a more equal and united society and counteract contemporary societal challenges, such as loneliness and social isolation, by creating places for everyone, across gender, ethnicity, income, and age (Klinenberg, 2018, p. 9). In his opinion, social infrastructure affects everyone and contributes to a perception of areas as inclusive and inviting. Klinenberg defines social infrastructure as public institutions and areas like libraries, schools, playgrounds, parks, sports facilities, courtyards, sidewalks, and recreational areas. Churches, community centres, and sometimes even commercial functions are also included in his definition (Klinenberg, 2018, p. 18). According to Klinenberg, social infrastructure is significant for children, the elderly and other groups who have reduced mobility and are to a greater extent bound to the place where they live (Klinenberg, 2018, p. 17). Similarly, if the infrastructure is designed, built, and maintained with only a narrow

demographic in mind, this may undermine its function as social infrastructure.

Social infrastructure for all is an essential part of the many Danish residential areas built in the post-war era, where welfare institutions were a fundamental aspect of planning (Kvorning, 2017). The welfare system ensures equal access to institutions and services in the local context; therefore, welfare institutions became structuring facilities in the newly built areas. Moreover, they enabled a modern daily life, with more women entering the labour market, which required easy access to school, institutions, shopping, and leisure activities. Kvorning states that welfare institutions today have a different meaning and role in the urban context than initially intended, as everyday life has acquired new rhythms and has become more differentiated and more spatially divided (Kvorning, 2017, p. 120).

Kvorning (2017, p. 128) argues that despite these changes, the local-oriented social infrastructure in the Danish residential areas still plays a significant role as social hubs that help shape the local civil society and have an inherent potential to be reinterpreted and further developed. In the disadvantaged areas on "the list of parallel societies," social infrastructure plays an even more critical role. There is an expanded welfare system in these areas, where social community work programmes (*boligsociale helhedsplaner*) co-funded by the non-profit housing sector and the municipalities aim to support the social life in the area, helping residents with job seeking and other daily necessities (Andersen et al., 2014, p. 5; Birk, 2017).

Existing research literature on disadvantaged areas identifies negative place reputation and territorial stigmatisation as particularly enduring aspects of these areas' multitude of problems (Permentier, 2012; Wacquant, 2007). Several studies find that negative place reputation is a significant worry for residents and that regeneration can paradoxically fuel territorial stigmatisation (Arthurson, 2013; Jensen & Christensen, 2012; Johansen & Jensen, 2017; Stender & Mechlenborg, 2022). Wacquant (2007) argues that residents internalise negative representations of their neighbourhood, resulting in lateral denigration and mutual distancing. However, this theory can be questioned, as it leaves little room for communities' local pride and ability to cope with and counteract the stigma (Jensen & Christensen, 2012), which we will return to in the case analysis and concluding discussion. In the disadvantaged areas, we typically find many vulnerable residents, many without work, and many children and elderly who are less mobile and more anchored to the local neighbourhood. Therefore, social infrastructure in these areas functions as a physical framework for organised social activities and social support facilitated by professionals for socially disadvantaged citizens. According to Latham and Layton (2019), social infrastructure is crucial because it is about accessibility for individuals from different social backgrounds to go about their daily activities freely and without barriers.

The Covid-19 pandemic severely impeded people's daily lives and created a range of new limitations for a while. The formal social infrastructure was closed for several months in Denmark and the rest of the world, though it was possible to go out in Denmark during all closures. The lockdown nonetheless made the formal social infrastructure visible in the selected cases, supporting Star's (1999) theory of an infrastructure's anatomy becoming more visible when it breaks down. Thus, the lockdown also made it possible to investigate otherwise unnoticed aspects of social infrastructure and register new, more temporary, and informal types of social infrastructure. The number of "pop-up infrastructures" (Flynn & Thorpe, 2021, p. 1) exploded worldwide during the pandemic, among other things, to regulate public space and promote social distancing. For example, the pandemic pop-ups included reorganising traffic systems for walking and biking, expanding restaurants into street spaces, and relocating refugees from tent camps to temporary accommodations in schools and hotels. Common for these pandemic pop-ups in Toronto and Sidney, however, was that they rarely involved the vulnerable citizens in the process. Deas et al. (2021) discuss examples of temporary use of public spaces in response to Covid-19-related literature and conclude that "creative temporary projects can have important demonstration effects, helping to influence future urban development policy and practice agendas" (Deas et al., 2021, p. 7).

Furthermore, some studies emphasise that the pandemic was not equally distributed geographically but reinforced disadvantaged areas (Bailey et al., 2020; Berkowitz et al., 2021; Brail et al., 2021). For example, in Denmark, already in the early stages of the pandemic, a higher incidence of Covid-19 was observed among non-western immigrants (Statens Serum Institut, 2020). At the same time, numerous disadvantaged areas on "the list of parallel societies" were highlighted in the Danish media as hotspots. Studies conclude that the media's representation and a high amount of negative media coverage increase stigma in these vulnerable areas and negatively affect the residents (Arthurson, 2013; Jensen & Christensen, 2012; Mechlenborg & Stender, 2022). Another group particularly vulnerable during the pandemic were the elderly, and some studies show that a large group of elderly were unsafe about leaving home and often forced to isolate themselves (Osborne & Meijering, 2021; Smith et al., 2020). The pandemic emphasised the need for local organizations and volunteers to provide services and help the elderly during these periods of isolation and increased risk of loneliness (Smith et al., 2020, p. 1).

Children and young people were also appointed as a group especially affected by the pandemic's consequences which more recent studies determine (Jones et al., 2020; Velde et al., 2021). Velde et al. (2021) conclude that Dutch children were less physically active during the lockdowns as the children spent more time inside

in front of the screen. According to Jones et al. (2020), the pandemic impacted all Australian children and young people, but the study highlighted that the impact was extra hard on vulnerable children and young people from families with financial instability, unemployment, and other challenging life circumstances.

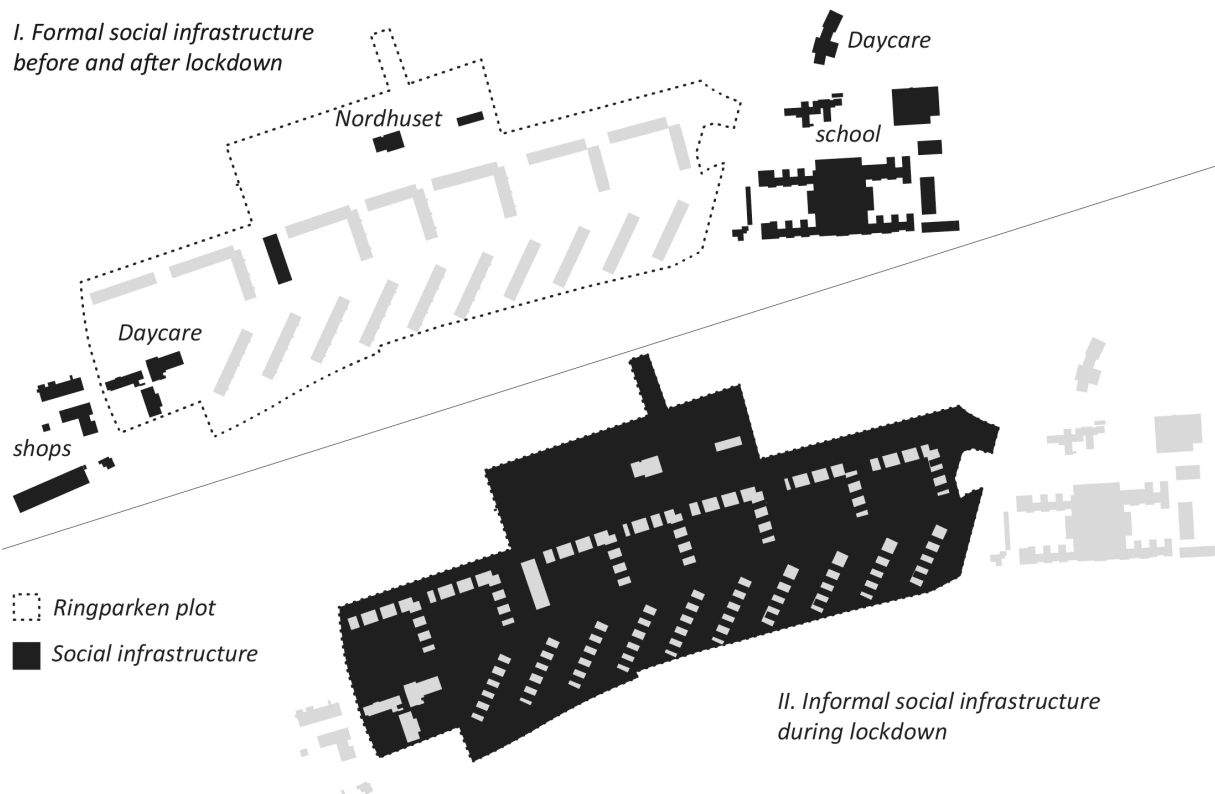
Glover argues that neighbourhood walking appears to have facilitated a rediscovery of our social connectedness as neighbours (Glover, 2021), and a Danish study shows a rise in voluntary help and care during the Covid-19 crisis in Denmark (Carlsen et al., 2020). Those receiving assistance were mainly people with few resources who are usually more dependent on welfare services, such as the unemployed who received support with the daily chores. The study however has an under-representation of ethnic minorities and the unemployed, whereas in our cases both groups are overrepresented. We want to stress the importance of including perspectives and voices from these groups. There is already rich evidence to suggest that the pandemic has had severe consequences for vulnerable groups and neighbourhoods, yet there is so far only sparse knowledge about how such people and places coped with the lockdown and what we can learn from this. Hence, this is our perspective in the case studies.

### 3. Ringparken

Ringparken is a social housing area located on the outskirts of Slagelse in a suburban location with a wide range of social infrastructure. In our interviews, residents stress the strong networks among the residents in Ringparken, though the community is also subdivided by different ethnic groups and networks. The largest networks have representatives on the tenants' board who act as intermediaries between the housing organisation and the residents. A group of predominately ethnic Danes is not included in those networks, however, and some of them, especially the elderly, are more socially isolated.

The residents highlight the community centre Nordhuset (see Figure 1) as the primary physical framework for social gatherings, with daily activities and events such as communal dining, flea markets, Christmas events, and Eid festivals. The general understanding is that their social network that bridges the ethnic divides partly comes from participating in the arranged social activities in Nordhuset. However, our field studies also revealed several overlooked social and shared spaces inside and around the housing blocks where residents meet daily. For example, a woman of Danish ethnic background stresses that although she mainly keeps to herself and does not attend events in Nordhuset, she knows her neighbours from the stairway or meets them outside the stairs and in the laundry room, which gives her a sense of social connectedness across ethnic divisions: "I don't mind the foreigners—they are nice and sweet. We greet and chat in the stairway, outside and in the laundry room," she says. Due to the pandemic, Nordhuset and

RINGPARKEN built: 1963-69, housing units: 868, residents: 1,647



**Figure 1.** Social infrastructure before/after (I) and during the lockdown (II) in Ringparken.

other formal meeting places in and around Ringparken closed, and organised social activities were cancelled for months. During this period, we saw that the often-overlooked informal meeting places like the stairways and the laundry room became even more essential for maintaining social contact and interaction among the residents besides the recreational areas in and around the housing area. The increased use of the recreational areas facilitated a rediscovery of social connectedness as neighbours, supporting studies by Glover (2021).

During the first Covid-19 lockdown in the spring of 2020, Ringparken emerged as a hotspot that generated regional and local media attention. Several negative articles in the media focused on the numerous cases of infected residents in Ringparken and the need to communicate in many different languages to avoid the spread of Covid-19. A representative from the housing organisation stresses the importance of collaborating with the tenants' board in disseminating information about Covid-19:

They were the ones who took responsibility and were able to reach out to the residents. Also, the residents listen to them much more, so if some people need to come out wagging a finger that they need to be vaccinated, then it's received better coming from them than from us.

They also went door to door to inform about the pandemic in different languages and handed out small gifts to the children and the elderly who isolated themselves to avoid infection. At the same time, non-physical platforms were established to provide help, such as a telephone number the elderly could call for help with grocery shopping. A local rapper made a music video with residents to inform and educate the youth in the neighbourhood on the importance of social distancing. Furthermore, a group of volunteers representing different ethnic groups took action and disinfected the stairways in Ringparken's housing blocks and the playgrounds in the area three times per week during the closure. Their initiatives created positive stories in the media with headlines like "Volunteers in Residential Areas Collect Garbage and Disinfect Stairwells: —We Do It to Help the Government" (Sativa, 2020). Contrary to dominating theories on territorial stigmatisation (Wacquant, 2007), the initially negative media stories about Ringparken did not make residents internalise the stigma and adhere to lateral denigration. Instead, they activated local networks and used existing shared spaces between the private and the public to meet and socialise despite Covid-19. Entrances, stairways, and laundry rooms are all necessary spaces in everyday practice and are not part of an active choice like the formal social infrastructure. Normally, these shared spaces have another

primary purpose than social interaction, but in this situation, they transformed into social and collective representative spaces to be purified and communicated to a broader public.

Overall, various initiatives during the pandemic shifted media coverage from negative to predominantly positive narratives of Ringparken. According to the housing organisation, there was an increased interest among the resourceful residents in helping their neighbours and a motivation to tell good stories about Ringparken, which converge with research by Carlsen et al. (2020). During the lockdown, the stairwells and other informal shared spaces in the area enjoyed a renewed role as a physical, social infrastructure for everyday interaction and distribution of help amongst residents (see Figure 2).

#### 4. Sundparken

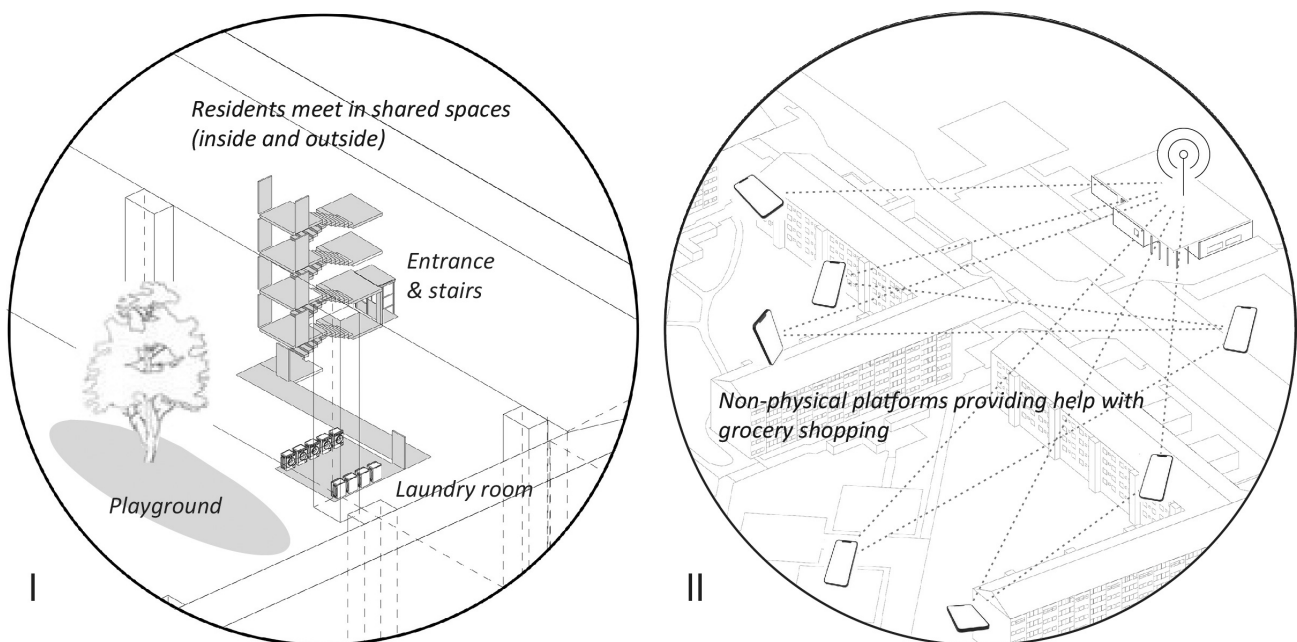
The social housing area Sundparken is located on the outskirts of Horsens, which is a medium-sized provincial town in Denmark. Our field studies and interviews in Sundparken emphasise the existence of social networks among the residents, though the community is also subdivided by different ethnic groups and networks. In our interviews, residents typically highlighted the proximity to the school, day-care, shopping, recreational areas, an activity centre and the so-called Sundparkhallen, a sport and community centre, as positive features of the neighbourhood (see Figure 3). Sundparkhallen attracts both residents of Sundparken and visitors from the surrounding local area and functions as a vibrant, centrally located meeting place. In addition, the area's large number of children and young people participate in activities in Sundparkhallen and use the facilities for leisure activities, which helps structure their free time. During daytime and

evening hours, local organisations also offer line dancing, yoga, etc., to adults and the elderly in and around Sundparken, and the field studies clearly showed that Sundparkhallen functions as an essential gathering place for all ages.

During the pandemic, the activity centre transformed into a public test centre, while Sundparkhallen and other social infrastructure were closed, and activities were cancelled. However, the manager of Sundparkhallen launched alternative activities to engage the children forced to stay home during the lockdown. He started a new online channel where he arranged creative workshops, quizzes, and cooking lessons, and every night at 7 pm he read goodnight stories to the children. His intent was to maintain contact with the children, and his initiatives were highlighted in several articles as a positive story about Sundparken. Despite his efforts, he feels that the online activities did not reach all children:

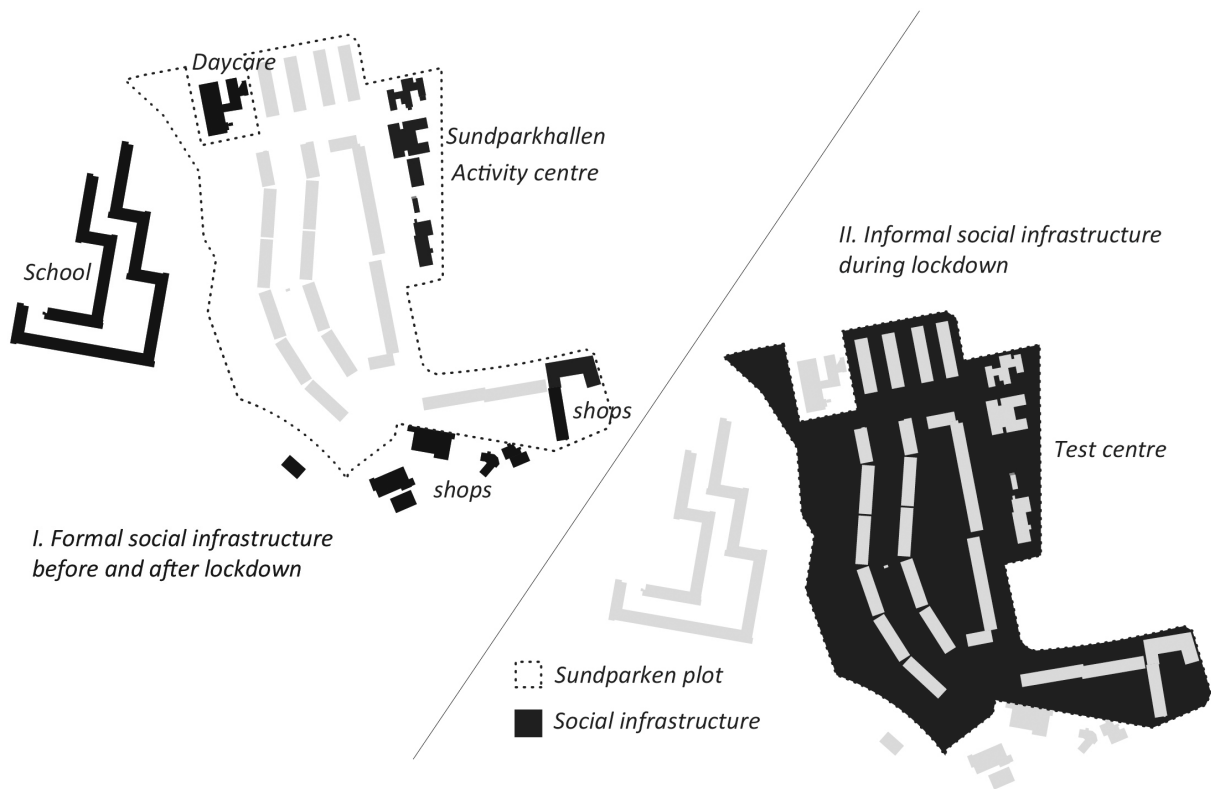
The initiatives we made online were a success, but it was far from everyone who participated. There were fewer [kids than usual]. Usually, we have 150 kids in Sundparkhallen each week, and not all 150 were online—So we lost something social.

Several residents add that some of the young people in the area seemed more bored during the lockdown, which led to more trouble in the form of vandalism and groups hanging out on the street corners. Subsequently, several of the interviewed children and young people themselves said that they missed the physical meeting places and activities. Despite this, the manager experienced that it was not until three months after lockdown that daily attendance reached pre-pandemic levels. From his perspective, it was very quiet in the residential area



**Figure 2.** Informal and shared spaces (I) and non-physical platforms (II) in Ringparken.

SUNDPARKEN built: 1968-72, housing units: 577, residents: 1,462



**Figure 3.** Social infrastructure before/after (I) and during the lockdown (II) in Sundparken.

during the shutdown, as many residents followed government instructions and stayed indoors.

An older resident from Sundparken stresses that under normal circumstances, she participates in activities in Sundparkhallen. For example, she attends line dancing and engages in communal dining, as she enjoys meeting the other residents at the many different activities arranged. She felt sad when Sundparkhallen closed, and her friends and neighbours stayed indoors. She says: “I felt lonelier during the Corona because all the activities stopped. Some of us met outside the hall and danced line dance when the hall closed. It helped a little to meet the others.” In her perception, she was not the only one who felt lonelier during the Covid-19 period. Yet, she found it challenging to meet her neighbours and help them because people stayed indoors; therefore, she met fewer neighbours on the stairs and in the other shared spaces.

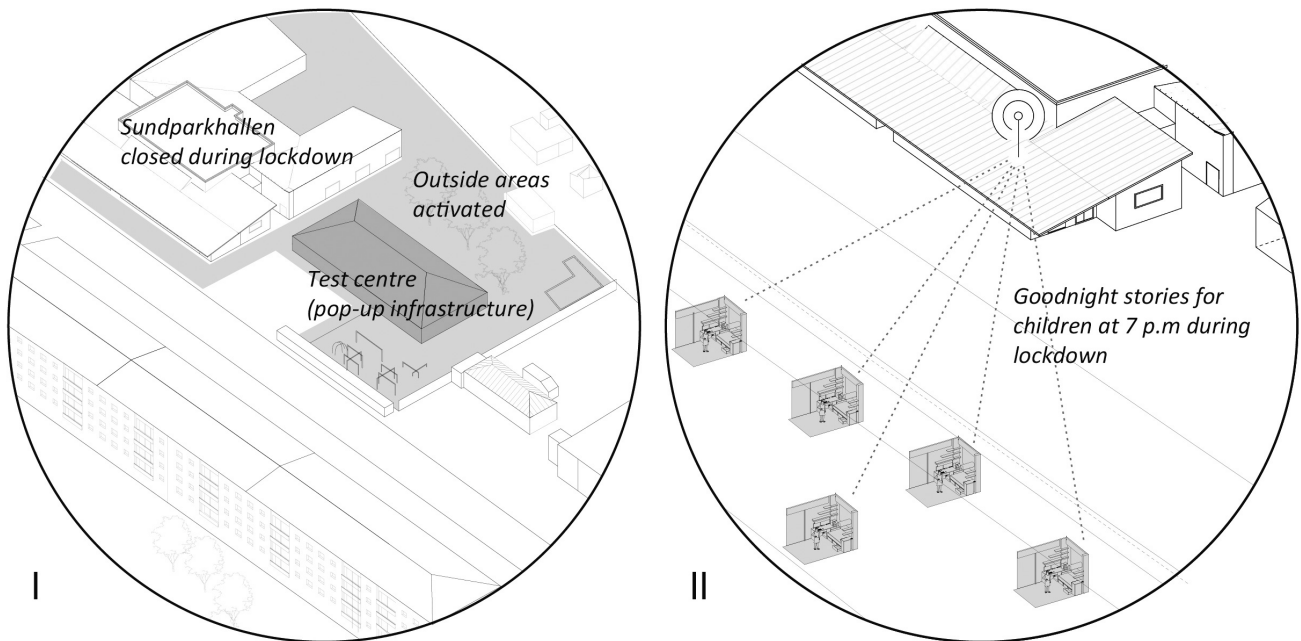
Our field studies show that many residents in Sundparken stayed indoors during the lockdown, especially older people, who felt even more lonely, which converges with research by Smith et al. (2020). The lockdowns created opportunities and platforms for social interaction and activated new gathering places in and around the area (see Figure 4). The activity centre was transformed into a test centre as an example of state-initiated pop-up infrastructure (Flynn & Thorpe, 2021). Areas between the activity centre and Sundparkhallen were activated by line dance, and other activities were

arranged in small groups as an example of temporary use. Rather than a top-down initiative (Deas et al., 2021), this was based on self-organised networks. The current regeneration plan is to move Sundparkhallen to another location far from Sundparken as a part of the site’s future development. However, our field studies indicate what it may mean if Sundparken loses its meeting point where residents of all ages meet, making it necessary to consider a strategy for alternative ways of social interaction. The location of Sundparkhallen inside Sundparken is of great importance, especially for groups with reduced mobility, such as the elderly and children, which supports one of Klinenberg’s points that the social well-being of these groups often depends on easy access to social infrastructure (Klinenberg, 2018, p. 17).

### 5. Mjølnerparken

Mjølnerparken is located in Nørrebro, an inner suburb of Copenhagen and one of the densest areas in the city. It consists of four perimeter blocks arranged around common courtyards connected by a path throughout. Unlike most Danish post-war social housing areas, there are no green lawns within the estate, but instead two urban public parks on either side of Mjølnerparken: Mimersparken and Superkilen, where especially the former is often used by residents and regarded almost as “their own backyard” (see Figure 5).





**Figure 4.** Informal shared spaces (I) and non-physical platforms (II) in Sundparken.

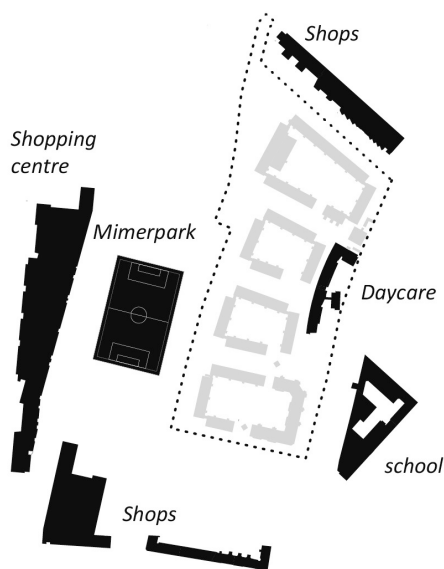
Some of Mjølnerparken’s social infrastructure is thus located in the surrounding neighbourhood. Yet the housing area also includes two day-care institutions, meeting rooms for the housing organisation’s social community work programmes, and a community centre, which were all closed during the lockdown. The nearby schools and youth clubs were also locked down for several months, and according to one resident, this visibly fuelled the

problem of youngsters hanging out in the neighbourhood: “It has become worse due to Corona, as they cannot go to the club. So, they hang out here and vandalise....The children have been out of school, and that is something one can really feel,” she said.

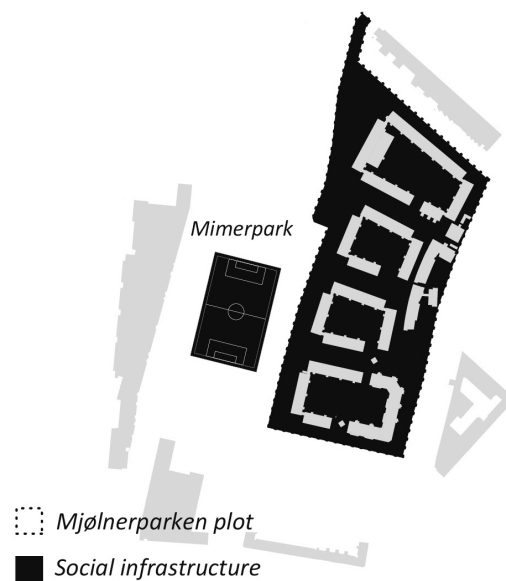
One of the blocks in Mjølnerparken accommodates a senior co-housing scheme, where 18 elderly residents have their own flats and share a common room on the

MJØLNERPARKEN built: 1984-87, housing units: 560, residents: 1,790

*I. Formal social infrastructure before and after lockdown*



*II. Informal social infrastructure during lockdown*



**Figure 5.** Social infrastructure before/after (I) and during the lockdown (II) in Mjølnerparken.

ground floor with a small garden. Some of these residents used to meet with other elderly from the neighbourhood for a senior work-out in the community centre, but during Covid-19, this was conducted on the lawn outside instead. They transformed their fitness classes into group walks in the nearby park Mimersparken, with exercise taking place on the outdoor sports and play equipment of the park. A woman residing in the co-housing scheme stresses that their proximity to the open green spaces proved quintessential for maintaining social activities, as did the semi-formal social networks:

Something very important is that all our activities have a voluntary coordinator, someone who can take care of things....So, they measured up the rooms and said: "There can be five or 10 people in here." And they sent text messages to those who did not show up by themselves.

In the network of Arabic women, one resident created daily contests over WhatsApp revolving around questions like: How many steps are there on the stairs up to the third floor?

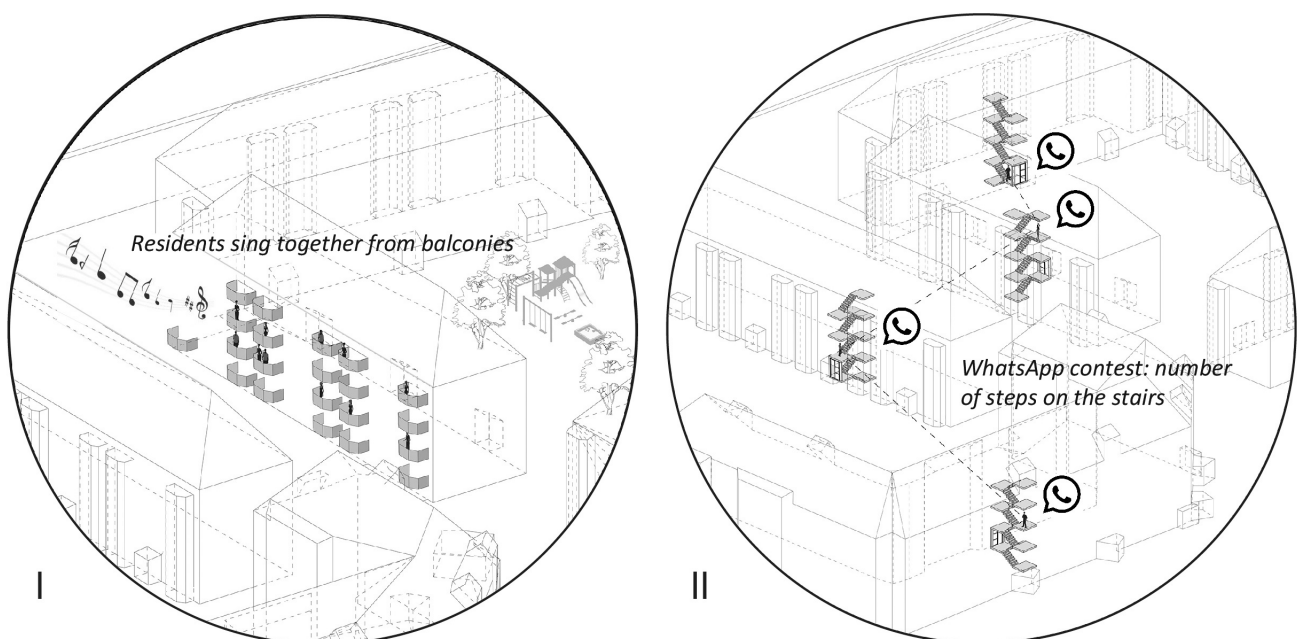
As these examples demonstrate, existing social networks were key in maintaining the community through alternative activation of the physical spaces. The residents also participated in balcony singing at five o'clock every day to keep socialising despite the lockdown, and organised entertainment by street performers in the courtyards and paths that residents could view from the balconies. Though temporary, such initiatives offer an interesting alteration of the area's social infrastructure: By using the balconies for community singing and performance, residents situationally transformed the building's façade into a vertical common room (see Figure 6).

As in Ringparken, the residents transformed semi-private spaces into social and collective representative spaces to be communicated to a broader public.

An implicit aspect of the balcony singing is a demonstration against the PSA, which in Mjølnerparken involves a pending sale of this block and a relocation of residents, including the senior co-housing scheme. It is worth noting how two outside threats—Covid-19 and the pending sale—activate and render visible more informal and ad hoc social infrastructure in new spatial configurations. As in Ringparken, the stigmatisation inherent in both the PSA regeneration and negative media attention has not just been passively internalised but has sparked creative responses through the activation of social infrastructure. Rather than building on such infrastructure, the current regeneration efforts however inhibit it, e.g., by relocating the senior co-housing scheme outside of Mjølnerparken.

## 6. Concluding Discussion

The Covid-19 lockdown can be regarded as an experiment exposing essential social infrastructure on several different levels. The first level concerns the formal spaces and facilities designed with a specific purpose such as libraries, schools, playgrounds, parks, and sports facilities forming public life and facilitating social interaction (Klinenberg, 2018; Kvorning, 2017). These welfare institutions were often designed by leading architects of their time and were created as a physical structuring framework around the ideals of the welfare state. However, these formal spaces became even more visible during the pandemic through their temporary absence. As several authors have argued, social infrastructure thus tends to be invisible until it breaks (Star, 1999, p. 382), simply



**Figure 6.** Informal social infrastructure (I) and non-physical platforms (II) in Mjølnerparken.

because we take it for granted and do not notice it until something goes wrong or it has been taken away (Latham & Layton, 2019).

The accounts from the three case studies above testify to how Covid-19 rendered fundamental social infrastructure conspicuously absent in disadvantaged neighbourhoods: The shut-down of basic state-supported social infrastructures such as schools and youth clubs suddenly stressed the utmost importance of providing places for children and youngsters to hang out, learn, and interact. As Steiner and Veel (2021, p. 80) note, many parents during the pandemic thus witnessed “the instantaneous breakdown of decades-old infrastructures that had once guaranteed full-time state-supported care and education for their children, whom they suddenly had to home-school and care for, often while maintaining full-time jobs.” Such experiences of the break-down were amplified in disadvantaged neighbourhoods, where flats are often crowded, children do not necessarily have their own room, most parents cannot work from home, and many may have neither the technological devices nor the skills to help children engage in online instruction, which converges with studies by Jones et al. (2020). As our case studies demonstrate, it was thus not only parents but whole local communities who felt the breakdown of the infrastructures normally taking care of children and youngsters who were suddenly hanging out in the common spaces during the day, engaging in loitering and vandalism.

It was, however, not only the spaces for children and youngsters but also those where grown-ups and the elderly used to meet that were suddenly missing. Like Smith et al. (2020) and Osborne and Meijering (2021) point out, many elderly felt unsafe about leaving home and were forced to isolate themselves during the lockdowns. When community centres and sports centres closed, residents and social workers in the areas could clearly feel the importance of such local spaces in facilitating their everyday social interaction. This absence also appears to be amplified in disadvantaged neighbourhoods, where many residents are more dependent on local networks and welfare services. In some cases, activities were transferred to outdoor areas, thereby maintaining the social activities in new spatial surroundings. This stresses the importance of providing adequate open outdoor spaces like parks, courtyards, and recreational areas as key flexible social infrastructure. Covid-19 internationally encouraged innovations in such spaces through pop-up infrastructure (Flynn & Thorpe, 2021) and temporary use (Deas et al., 2021). As these scholars emphasise, future urban planning ought to create capacity for emergency uses that can bolster resilience and ensure the support of innovative land use. Yet several of the examples from our case studies also involved even more mundane and normally unnoticed physical spaces like empty lawns between buildings, parking lots, stairways, corridors, entrance areas, and other zones bordering private and common spaces, like facades with balconies.

These constitute the second level of social infrastructure that was not absent in the pandemic but on the contrary appeared as alternative, temporary spaces for interaction or common reference. It was in these spaces that bills and notices communicating to and among residents were posted; it was here that food, gifts, and bags with supplies for children or sick residents were exchanged among neighbours. These shared spaces that are equally shared and accessible for all residents are part of daily routines and usually have another primary purpose than social interaction and rarely have the same architectural quality as the formal social infrastructure. Interestingly, the case studies show that such spaces are not just a locus for daily, social interaction, but also seem to have a symbolic function as a common reference, internally binding communities together—for instance, when a network of women holds a contest about guessing the number of steps without being there on the stairways together, or when small groups of residents come together cleaning and disinfecting the stairways as an event that reached the media, thereby improving the outwards representation of their community. This calls for nuancing leading theories on territorial stigmatisation (Wacquant, 2007). Residents in disadvantaged housing areas do not just passively internalise the stigma of negative media stories about their neighbourhoods. Rather, they also counteract the stigma and provide other stories about the place and community in collaboration with local professionals. Yet, it also calls for adding new perspectives to both the concept of social infrastructure and scholarly discussion of what urban planning can learn from Covid-19: Where existing research tends to emphasise state-initiated coping with disadvantaged groups or temporary use of unplanned spaces through pop-up infrastructure, we suggest paying closer attention to local self-organisation also in disadvantaged neighbourhoods.

Learning from Covid-19 is thus not only about how the importance of spaces designed to facilitate social interaction becomes more visible when they close or break down, nor is it only about providing sufficient space for temporary, pop-up, and emergency use to bolster resilience. It is also about directing our attention towards what Latham and Layton (2019, p. 5) describe as “the whole range of often overlooked and underappreciated urban spaces—and all sorts of overlooked and underappreciated practices,” where we especially want to emphasise the interrelation between such spaces and social practices. Our study stresses the importance of ensuring a higher architectural quality in these shared spaces when areas are regenerated. There is considerable potential for more focus and care on the everyday spaces that are part of all residents’ lives instead of a one-sided focus on the unique and formal welfare architecture used by some.

Important here is consequently also a third level of social infrastructure, namely the informal, often technologically mediated social networks activating

these spaces: the mailing lists, social media platforms, WhatsApp groups, and telephone lists making it possible for people to maintain contact even when they cannot meet face to face. The pandemic clearly fuelled the importance of such networks, yet even in pre- and post-pandemic times, they have an increasing impact on who uses what spaces and interacts with whom. Just like Venturi et al. (1977) developed new ways of mapping the urban environment to better include the ugly and ordinary, we need to develop new ways of mapping social infrastructure, including not only the spaces designed for social interaction but also those unnoticed places where social interaction takes place, as well as the social networks that activate them. Whereas the post-war housing areas were originally designed with an emphasis on the first level of social infrastructure, better insight into the other levels of social infrastructure is essential for their current regeneration, as this is also where people meet and mobilise, where information is exchanged, and where social life takes place.

Building on Klinenberg, Glover notes that a pandemic reveals “social conditions that are less visible, but nonetheless present in everyday life” (Klinenberg, 1999, p. 242, in Glover, 2021, p. 281). He argues that the pandemic has in fact strengthened social connectedness in many neighbourhoods, though there is no assurance that the resurgence of neighbouring will survive the pandemic (Glover, 2021). Based on our case studies, the observation on social connectedness also holds true in disadvantaged neighbourhoods, and there is potential that it can survive the pandemic if we find new ways to include it in urban planning and regeneration. Yet this still calls for some nuances: Some groups of residents were a lot more dependent on the designed places for social interaction that closed down during the pandemic, such as schools, churches, community centres, etc.; i.e., the state-supported spaces that we have referred to here as the first level of social infrastructure. This applies especially to children and the elderly, who as Klinenberg (2018) argues have reduced mobility and are to a greater extent bound to the place where they live. The field studies in Sundparken supported Klinenberg’s theory that although the digital activities and goodnight stories were a success, the number of participating children fell. Though Covid-19 has made virtual space even more prevailing regarding social interactions, such platforms do typically not empower the already most vulnerable like the elderly and the children. This emphasises the importance of stimulating other self-organised actions and meeting places to compensate for this. Extensive international research shows that the pandemic especially impacted disadvantaged children and stressed that they are one of the groups that also need to meet physically (Jones et al., 2020; Velde et al., 2021). The same goes for those who are not included in the more informal and technologically mediated networks, and who neither receive text messages about turning gymnastics class into an outdoor walk in the park, nor participate

in WhatsApp competitions about the number of steps. Those residents are more dependent on meeting—if only for a quick informal greeting or chat—neighbours in the park, on the stairs, and in the laundry room—which we refer to here as the second level of social infrastructure—perhaps even more so than the first level social infrastructure (community centres, etc.) where they do not necessarily feel comfortable attending as it requires an active choice to participate.

As already cited, Klinenberg (2018) emphasises that social infrastructure should ideally be for everyone and that spaces designed, built, and maintained with only a narrow demographic in mind may undermine their function as social infrastructure. However, spaces for everyone may also end up being spaces for no one, and in the post-war housing areas, it is not uncommon that lawns, community centres, and other facilities are standing empty, or only frequented by a very limited group of residents. The case studies, however, have shown how local networks can mobilise and activate such spaces in new and creative ways in a time of crisis. What we can learn from this is that even in post-pandemic urban planning, we should map, include, and build on these infrastructures to improve relations between local social networks and their physical spaces. In his essay on the political and social effects of Covid-19, Žižek (2020) warns against celebrating the pandemic as an opening for people to organise locally, arguing that an efficient state is needed more than ever, and that self-organisation of communities can only work in combination with the state and with science. We agree with this but stress that both the state and science ought to learn from the types of self-organisation that arise locally in a state of emergency like the pandemic. As this study has demonstrated, state-initiated social infrastructure plays an important role in disadvantaged neighbourhoods, yet it only constitutes the first level of social infrastructure. The second and third levels of social infrastructure are just as important to map, activate, and learn from in future regeneration.

### **Acknowledgments**

The authors acknowledge all the participants who have contributed to the study. The authors would also like to thank Claus Bech-Danielsen, Mette Mechlenborg, Rikke Borg Sundstrup, and the rest of the research team involved in the long-term evaluation of Danish regeneration projects. Furthermore, the authors would like to thank the three anonymous reviewers for their helpful comments. This work was supported by the Danish National Building Fund and the philanthropic association Realdania.

### **Conflict of Interests**

The authors declare no conflict of interests.

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## About the Authors



**Marie Stender** is an anthropologist and senior researcher in the Department of the Built Environment at Aalborg University. She is the head of the research group Transformation of Housing and Places, the vice chairperson of the Danish Town Planning Institute, and the founder and project manager of the Nordic Research Network for Architectural Anthropology. Her research focuses on place-making, disadvantaged neighbourhoods, social sustainability, and the relationship between social life and built environments.



**Lene Wiell Nordberg** is an architect and researcher in the Department of the Built Environment at Aalborg University and part of the research group Transformation of Housing and Places. Her research focuses on the relationship between social life and built environments, with a specific interest in disadvantaged neighbourhoods, social sustainability, and housing research.