

# The Social Zipper: Redefining the Role of Streets in Disadvantaged Housing Estates

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## Abstract

Danish postwar non-profit housing estates reflect the rise of the welfare state by providing quality housing for all, regardless of income. Typically built on the outskirts of cities, these estates were shaped by modernist ideals of traffic separation and functional zoning. Today, several states face criticism for their physical and social fragmentation. In response, the Danish government introduced the Parallel Society Act in 2018, mandating mixed forms of ownership in selected estates to promote greater social and functional diversity. The Parallel Society Act has led to extensive physical changes, including the creation of new internal streets designed to reduce isolation, increase “eyes on the street,” invite visitors, and foster social interaction. These interventions represent a new planning paradigm, in which streets are reframed as “social zippers.” This article explores how such transformations are envisioned and experienced in two Danish estates: Gadehavegaard and Gellerupparken. Drawing on methodological approaches inspired by architectural anthropology and based on an ongoing long-term study conducted by an interdisciplinary team since 2019, we examine how the role of streets as “social zippers” shapes perceptions of connectivity, safety, child-friendliness, and livability among residents and visitors. Findings reveal ambiguous outcomes: While streets are intended to connect people and spaces, residents often perceive them as intrusions into established social structures and spatial routines. This raises critical questions about whom such interventions are designed to serve and whose everyday lives they aim to reshape. The study underscores the need for participatory, context-sensitive approaches to avoid reproducing the fragmentation these policies seek to address.

## Keywords

disadvantaged housing estates; new streets; social zipper; suburban transformation



The architects behind the forthcoming transformation describe their design intention as follows:

Our primary strategy is to establish a vibrant, unifying street running along the center of Gadehavegaard. The “zipper” ensures a connection between the existing and the new and creates a shared, equitable, and engaging space for current and future residents, as well as for students and visitors. (Arkitema Architects, 2020)

According to Arkitema Architects, the street is intended to function as a new type of public space, accommodating multiple modes of transport, bicycles, cars, and pedestrians, while also facilitating daily interactions between existing and new residents. Ideally, it will be attractive and safe enough to draw visitors into the heart of the estate.

The term “social zipper,” inspired by Arkitema’s concept, is used in this article as a metaphor for the reinterpretation of streets as social meeting spaces, a feature shared by many of the estates examined in the evaluation. This represents a pivotal shift from the original traffic-separated planning models, which were rooted in modernist ideals emphasizing functional zoning, the segregation of traffic modes, and physical separation from surrounding street infrastructure to reduce noise and pollution from cars (Bech-Danielsen, 2022; Turkington et al., 2004).

In recent decades, the urban renewal of disadvantaged post-war estates has extended beyond Denmark, with similar processes taking place across Europe and fundamentally transforming these housing areas (Bech-Danielsen & Stender, 2017). The PSA has attracted particular attention from neighboring Nordic countries, and because the full consequences of the legislation are not yet visible, sharing insights during the transformation can help deepen understanding of these processes as they unfold (Stender et al., 2025). While the PSA provides a framework for these transformations, this article focuses specifically on the relationship between physical changes and social life. Drawing on architectural-anthropological field studies, the article examines how new internal streets, envisioned as “social zippers,” reshape the social and spatial dynamics of post-war housing estates and how residents experience these changes in terms of everyday life, social interaction, and perceptions of safety and livability.

The article proceeds as follows. First, it provides an overview of the PSA to contextualize how the legislation changes the rules governing the non-profit housing sector, particularly in relation to Denmark’s tradition of resident participation. Next, it outlines the rationale for selecting two cases, Gadehavegaard and Gellerupparken, from a total of 15 housing estates, highlighting both their similarities and differences. The methods and data underpinning the findings are then described, focusing primarily on qualitative interviews with residents and stakeholders, along with spatial analysis of the two estates. The findings from Gadehavegaard and Gellerupparken are presented in two sections, emphasizing both planned and established internal streets and drawing on insights from the qualitative interviews. Finally, the concluding discussion compares the two cases and situates them within a broader analytical framework informed by existing scholarly literature.

## 2. The PSA

Danish non-profit housing estates have undergone ongoing maintenance and transformation over the years. However, in estates subject to the mandatory requirements of the PSA, the scale of planned interventions is unprecedented within the Danish context (Bech-Danielsen, 2022). This makes it particularly important to examine the impact of the legislation on both the targeted estates and their residents. Introduced in 2018, the PSA aims to physically restructure disadvantaged non-profit housing estates by promoting socio-economic diversification. Through extensive physical transformations, the policy seeks to attract more resourceful residents and reposition these estates within the broader urban hierarchy (Nielsen et al., 2023).

Since 2010, the Danish government has monitored approximately 200 non-profit housing estates with over 1,000 inhabitants for elevated levels of unemployment, crime, low educational attainment, and a high proportion of residents with non-Western backgrounds (Nielsen et al., 2023). The PSA applies uniform criteria, requiring non-profit housing estates that fail to meet specific standards to reduce the proportion of non-profit family housing from 100% to as low as 40% by 2030, a requirement currently affecting 17 estates. Consequently, municipalities and housing associations must implement this reduction through demolition, sale of units, rebranding, or new construction of private or owner-occupied housing. Beyond the compulsory introduction of mixed forms of ownership, most non-profit housing estates are undertaking more extensive transformations, including the incorporation of non-residential functions, the enhancement of recreational spaces, and the creation of new internal streets to open up the estates and strengthen their connections to the surrounding urban fabric.

Each year on December 1, a public list identifies non-profit housing estates that fail to meet the designated PSA criteria. This practice reinforces public labeling and contributes to further stigmatization, perpetuating these estates' position at the lowest level of the urban hierarchy (Stender & Mechlenborg, 2022). The PSA reflects a narrative that constructs these non-profit housing estates as "parallel societies" deviating from mainstream Danish norms, thereby legitimizing targeted social and physical interventions (Bech-Danielsen & Stender, 2017; Larsen & Delica, 2024). Initiatives implemented under the PSA framework also reflect a broader European trend toward reimagining and restructuring disadvantaged post-war housing estates. Compared to other nations, Denmark's approach is distinctive in its explicit emphasis on ethnicity, as the proportion of residents with non-Western ethnic backgrounds is one of five criteria used to classify areas as disadvantaged. Within the PSA framework, this criterion carries the greatest weight (Bech-Danielsen, 2022; Mechlenborg et al., 2025; Stender & Mechlenborg, 2022).

A case is currently under review by the European Union's highest court to determine whether Denmark's PSA constitutes discrimination, potentially violating human rights and the rights of minority groups. The outcome may influence the future implementation and legitimacy of the PSA (Stender et al., 2025). Nevertheless, although these large-scale transformations in Denmark are still ongoing, they are widely regarded as exemplary models and testbeds for urban renewal, attracting considerable attention from international scholars, policymakers, and urban development practitioners.

Traditionally, Denmark's non-profit housing sector has maintained a strong tradition of resident democracy, with formal influence exercised through elected boards and established processes (Nielsen et al., 2023). Residents are generally required to vote on major changes to their housing estates that may affect rent, a

procedure that also applies under the PSA. However, if residents reject a PSA development plan, their decision carries no weight, as the plan constitutes a binding obligation enforceable by a higher authority. In this way, the PSA effectively undermines the Danish tradition of resident democracy, allowing top-down state interventions to override established mechanisms of resident participation.

### 3. State of the Art: Streets as Social and Safe Spaces

In response to the widespread housing shortages following World War II, large-scale housing developments were constructed across Europe, shaped by a modernist planning legacy that emphasized functional zoning, traffic segregation, and the construction of industrialized, homogeneous apartment blocks (Turkington et al., 2004; Zupan, 2021). This approach was driven by ideals of efficiency, health, and order, aiming to provide residents with access to light, air, and green spaces while separating residential areas from industrial, commercial, and traffic-related activities (Bech-Danielsen, 2022).

Infrastructurally, these residential housing estates were commonly designed according to traffic separation principles, with major arterial roads encircling the estates, while internal streets were limited and often terminated in large or decentralized parking areas, emphasizing car-free communal spaces (Bech-Danielsen, 2022; Mehta, 2013). This approach was developed in response to the rapid rise in traffic-related injuries following the post-war increase in car ownership. Urban planners sought to minimize vehicular traffic through spatially efficient layouts, enhance street safety, and create pedestrian-friendly environments, particularly for children and other vulnerable groups (Marshall, 2005). According to Southworth and Ben-Joseph (2003), residents of car-free residential areas generally express satisfaction with what they perceive as a safe environment, a perception supported by findings from long-term evaluation studies (Nordberg & Sundstrup, 2021).

However, the traffic separation model, along with the zoning practices that produced large monofunctional housing estates, was soon criticized by prominent urban theorists such as Jacobs (1965), who highlighted the lack of permeability and diminished social interaction. Critics also argued that prioritizing traffic segregation often resulted in underutilized and poorly activated pedestrian zones, contributing to a reduced sense of safety due to the absence of passive surveillance, which Jacobs (1965) famously termed “eyes on the street.” According to Jacobs, this undermined both the perceived and actual safety of these environments, challenging the very rationale behind their original design principles.

In recent decades, urban renewal strategies have increasingly emphasized the (re)introduction of street networks to promote spatial connectivity, social inclusion, and urban vitality (Helleman & Wassenberg, 2004; Nordberg & Sundstrup, 2021). Several scholars note that streets as public spaces have the potential to foster community-oriented, inclusive, and socially engaged neighborhoods and cities (Filion, 2001; Mehta & Bosson, 2021). However, the addition of new street networks does not automatically encourage social interaction or community engagement (Stender et al., 2025). Without accompanying strategies, such as activating ground-floor spaces, promoting mixed land uses, and ensuring safety through “eyes on the street,” new streets can remain underutilized and may inadvertently reinforce patterns of neglect (Jacobs, 1965; Mehta, 2013).

Additionally, the introduction of new streets often requires the demolition or restructuring of existing buildings and communal green spaces, raising concerns among residents about the potential loss of community identity (Stender et al., 2025). The environmental implications of demolition, such as material waste and carbon emissions, have also attracted increasing criticism from professionals and the public, highlighting the need for more sustainable approaches to urban redevelopment. In Denmark, debate over both the transformations and associated demolitions has been particularly prominent in housing estates targeted by the PSA, where demolition was initially justified on socio-political grounds rather than environmental considerations (Bech-Danielsen, 2022).

Several scholars emphasize the importance of recognizing and understanding urban and suburban settings, which often respond differently to infrastructural interventions (Dovey & Pafka, 2014; Filion, 2001; Mehta & Bosson, 2021). Most research on streets as social and public spaces focuses on urban areas, whereas in suburban areas, the car remains the dominant mode of transportation (Mehta, 2013; Mehta & Bosson, 2021). Jacobs's (1965) conclusions are primarily based on urban areas with higher building densities than those typical of suburban contexts, raising the question of whether her principles can be directly applied to suburban landscapes (Dovey & Pafka, 2014). Furthermore, infrastructural strategies differ markedly in cities that reduce car traffic and parking to create more pedestrian-friendly environments. Carmona (2010, p. 127) uses the concept of "invaded space" to describe situations in which remaining urban public space is dominated by vehicular traffic, thereby diminishing its social function.

In both Danish and international contexts, most non-profit post-war housing estates were initially constructed on greenfield sites. Over time, these estates gradually became integrated into suburban and, in a few cases, urban contexts. The effects of new street networks can vary depending on the specific setting, underscoring the need for tailored urban renewal approaches that consider local conditions and community needs (Filion, 2001). Transforming streets from movement corridors into social spaces requires integrated planning across mobility, housing, landscape, and social infrastructure (Carmona, 2010; Dovey & Pafka, 2014). Low population density and the prevailing reliance on cars in surrounding suburban areas help explain the generous allocation of space for vehicles in these suburban centers (Filion, 2001). Paradoxically, this can create environments that are less conducive to pedestrian traffic and social interaction. The potential for social interaction also increases when speed limits are lowered, highlighting the importance of speed-reduction measures and the effective management of traffic volume and speed (Sauter & Huettenmoser, 2008). In addition, the physical characteristics of streets, including shade, façade articulation, sidewalk width, and street furniture, play a central role in supporting social behavior (Mehta & Bosson, 2021).

Finally, the question of urban integration remains politically charged. New streets designed to connect previously isolated housing estates with more affluent surrounding areas can encounter resistance both internally, due to fears of invasion or loss of identity, and externally, because of territorial stigma or concerns about property values (Bridge et al., 2011; Stender et al., 2025). Moreover, such interventions can leave existing residents, particularly low-income and racialized tenants, more exposed and vulnerable, as efforts to enhance safety and connectivity through design may unintentionally generate new forms of surveillance, spatial exclusion, and social tension (August, 2014). As such, reconfiguring spatial connectivity is as much a socio-political negotiation as it is a matter of physical design. This view is further supported by research emphasizing that the legitimacy and long-term success of urban regeneration, including the implementation of improved street designs, depend heavily on participatory planning processes that actively

involve residents (Bech-Danielsen, 2022; Southworth & Ben-Joseph, 2003). Other scholars note that urban integration efforts must also consider residents' emotional experiences and everyday practices, as these fundamentally shape how public space is perceived and used (Stapper & Duyvendak, 2020).

This article examines how newly introduced and planned streets in disadvantaged housing estates, conceptualized as "social zippers," are redefining the role of streets and reshaping social and spatial dynamics within these estates. Drawing on qualitative interviews, the article explores residents' everyday experiences, social interactions, and perceptions of safety, situating these insights within the broader academic debates outlined in this section.

#### 4. Case Selection: Gadehavegaard and Gellerupparken

This article draws on data from an ongoing long-term evaluation, initiated in 2019, examining the 15 non-profit housing estates that appeared on the PSA list that same year. Even if some of these estates are no longer included on the list, they are still required to complete the mandated restructuring by 2030. All 15 housing estates were originally developed during Denmark's most significant post-war building boom, spanning from the early 1960s to the early 1980s (Bech-Danielsen, 2022).

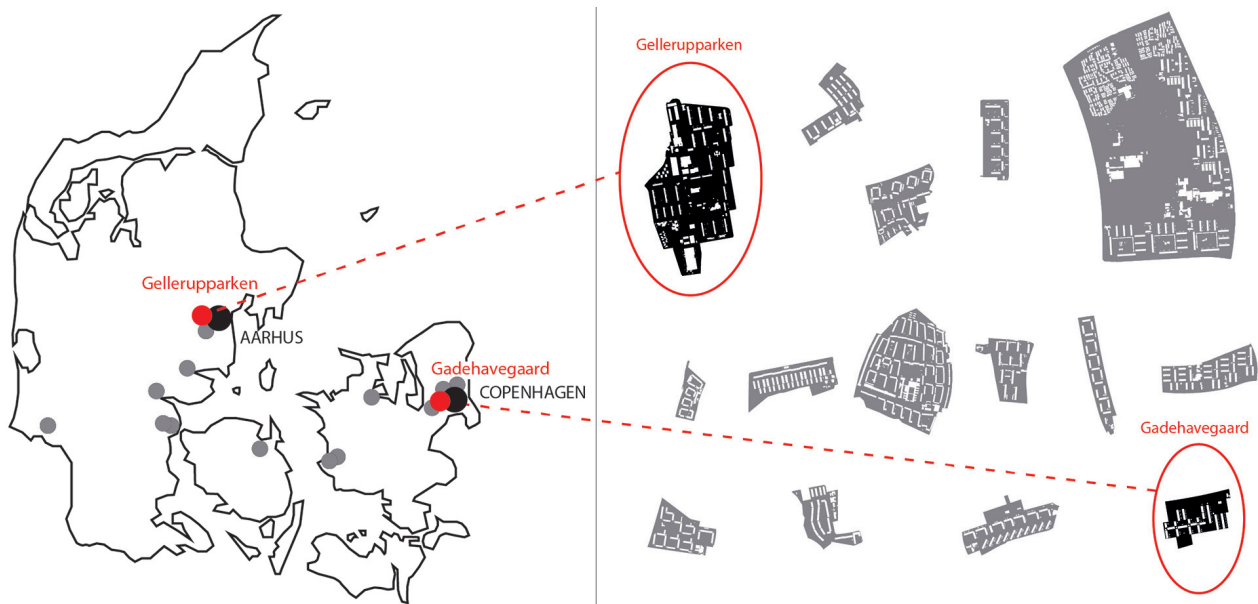
As products of modernist planning ideals, all the designated estates, except one, are characterized by functional zoning, traffic separation, and uniform apartment blocks. In nine of the 15 designated estates, proposed strategies include creating new internal streets and significantly modifying existing street networks, primarily to enhance car mobility, increase accessibility, and attract visitors. Although traffic interventions are only one of several planning tools, they are often the most substantial and frequently serve as the initial step in a broader transformation process. Such interventions typically involve considerable alterations to the building fabric through demolition and reshape the relationship between private and public boundaries around apartment blocks.

Under the PSA, municipalities and housing associations are required to prepare a development plan outlining strategies to meet legislative requirements. In several cases, this has been followed by an architectural competition presenting visions for the transformation. While the long-term valuation draws on extensive empirical material from all 15 housing estates, this article focuses on two cases, Gadehavegaard and Gellerupparken, to provide a detailed account of the context and to illustrate patterns observed across the broader dataset. In both cases, the transformation visions stem from architectural competitions. They are characterized by a high level of ambition, with explicit strategic objectives for the estates, their wider urban contexts, and particularly the design and function of the new internal streets, making them especially valuable for the analysis presented here.

The transformation of Gellerupparken began before the implementation of the PSA and has significantly shaped the estate's design, emphasizing mixed forms of ownership through processes such as demolition, rebranding, unit sales, and the construction of private or owner-occupied dwellings (Regeringen, 2018). Gellerupparken also exemplifies a comprehensive physical transformation, featuring new infrastructure, functional diversification, and redeveloped green areas that substantially alter the estate. The effects of these infrastructural changes are already tangible, both visually and experientially, for residents and visitors alike (Bech-Danielsen et al., 2020; Stender et al., 2023).



Gellerupparken serves as a test case for the other targeted estates and thus represents an illustrative example, particularly as several of the other estates remain in the initial stages of transformation. Measured by area, number of housing units, and residents, Gellerupparken ranks as the second-largest non-profit housing estate in Denmark, with approximately 5,600 residents and 2,400 dwellings (see Figures 2 and 5). Its size is comparable to several major European post-war social housing estates, underscoring its relevance as a case in an international context (Bech-Danielsen & Stender, 2017).



**Figure 2.** Left: Map of Denmark showing the 15 non-profit housing estates (grey dots), Gadehavegaard and Gellerupparken (red dots), and the nearby cities Aarhus and Copenhagen (black dots). Right: The 15 non-profit housing estates shown on a comparable scale.

Gadehavegaard is comparable in scale to 11 of the 15 housing estates subject to the PSA but is significantly smaller than Gellerupparken (see Figure 2). It houses approximately 2,150 residents in about 1,000 dwellings (see Figure 3). The estate was selected because, like Gellerupparken, it has been designated for extensive and ambitious transformations defined through an architectural competition. Within this framework, the planned internal streets constitute a primary strategic element, envisioned as a “zipper” or central backbone for the future development of Gadehavegaard.

## 5. Methods: Architectural-Anthropological Field Studies

An interdisciplinary research team at BUILD, Aalborg University, is conducting a 10-year long-term evaluation, following the regeneration process as it unfolds, with a particular focus on the physical transformations and their impact on residents’ everyday lives. The evaluation runs from 2019 to 2029, with field studies in each housing estate conducted in four rounds at two- to three-year intervals, enabling the transformation process to be followed over time.

The field studies employ a set of methods: desk research; architectural studies; on-site observations; systematic photographic documentation; media analysis covering a 12-month period in local, regional, and national newspapers; participant observation and field reporting; and qualitative interviews with residents,



representatives from housing organizations, municipalities, advisors, and local civil society. Methodologically, the 15 estates are divided into two groups, reflecting certain variations in data collection, with the two selected housing estates belonging to separate groups. Qualitative insights were gained through in-depth semi-structured interviews with residents and visitors in Gellerupparken, and through walk-alongs in Gadehavegaard. The methods are described below, and an overview of participants is provided in Table 1.

In both Gadehavegaard and Gellerupparken, a baseline and a second round of data collection were conducted as part of the field studies, enabling a preliminary analysis of developments over the period. In Gadehavegaard, the field studies were conducted in 2021 and 2023, while the transformation and associated infrastructural interventions remain in the planning phase (Bech-Danielsen et al., 2021, 2023). In Gellerupparken, data collection took place in 2019 and 2022. Although transformations in Gellerupparken began in 2011, the process is still ongoing (Bech-Danielsen et al., 2020; Stender et al., 2023).

Methodological approaches in this article are inspired by architectural anthropology, focusing on the interaction between physical changes and social life (Stender et al., 2022). As a result, the data supporting the findings in this article are drawn primarily from the architectural studies combined with the qualitative interviews with stakeholders and interviews or walk-alongs with both residents and visitors in the two cases (see Table 1).

**Table 1.** Overview of participants in the field study of Gadehavegaard and Gellerupparken ( $N = 161$ ).

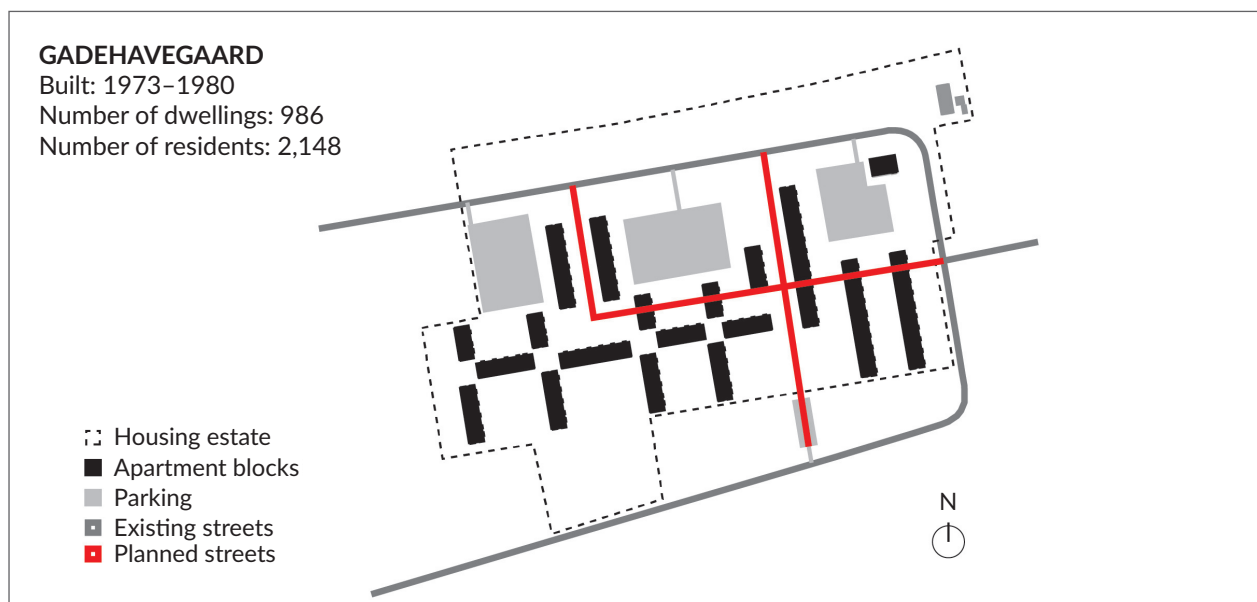
Participants	Housing estate Year of field study			
	Gadehavegaard 2021	Gadehavegaard 2023	Gellerupparken 2019	Gellerupparken 2022
Municipality	1	1	1	1
Housing association	1	1	1	1
External advisors (architects, planners, etc.)	—	1	1	—
Housing community worker	1	1	—	—
Leader of the local school	1	1	1	1
Leader of a local day care institution	1	—	—	—
Leader of local activities	—	—	1	1
Local real estate agents	1	1	1	1
Resident representative	1	1	—	1
Walk-alongs: residents and visitors	63	30	—	—
Qualitative interviews: residents and visitors	10	—	18	14
<b>TOTAL</b>	<b>80</b>	<b>37</b>	<b>24</b>	<b>20</b>

The housing estates targeted by the PSA are characterized by high levels of unemployment, crime, low educational attainment, and a large proportion of residents with non-Western backgrounds, alongside socially disadvantaged residents. To include marginalized voices, including non-Danish speakers, we prioritized physical presence in the field and conducted face-to-face interviews with residents and visitors in outdoor settings rather than relying on digital or telephone contact. In Gellerupparken, simple, open-ended

questions were used to facilitate participation across different language proficiencies. Participants determined the location and duration of the qualitative interviews, whether in their homes or in public spaces. All in-depth interviews were recorded and transcribed. In Gadehavegaard, walk-alongs were conducted outdoors, linking questions directly to the physical surroundings and enabling the recruitment of residents who might otherwise not engage. All walk-alongs were documented through field notes and observations. Across both methods, participants were selected to ensure diversity in age, gender, and ethnic background, reflecting the composition of the estates.

## 6. Findings From Gadehavegaard

Gadehavegaard is situated approximately 25 kilometers west of central Copenhagen. Currently, before the planned transformations, it is a non-profit housing estate characterized by an extended street structure that encircles the estate, with car access limited to three large parking areas along the northern periphery (see Figure 3).



**Figure 3.** Map of Gadehavegaard showing existing and planned streets.

In the vision for the future Gadehavegaard, the architectural firm Arkitema Architects places strong emphasis on the new internal street, conceived as the estate's future backbone and referred to by the architects as the "zipper" in their winning proposal from the architectural competition: "We are introducing a vibrant city street through the middle of Gadehavegaard. The street stitches the estate together from east to west and brings life and energy into the center of the settlement" (Arkitema Architects, 2020). Although the project is still in the planning phase, this vision represents a decisive shift from the original traffic-separated layout, inspired by modernist planning ideals that prioritized traffic segregation and physical isolation to reduce noise and pollution from cars (Bech-Danielsen, 2022; Turkington et al., 2004). Figure 4a shows the original traffic-separated layout in Gadehavegaard before the transformation, with car-free courtyards and a network of paths between the apartment blocks and Figure 4b is a visualization of the future zipper.



**Figure 4.** Gadehavegaard (a) before the transformation, and (b) in 2030 after the transformation (visualization). Source: Arkitema Architects (2020).

The new street aims to integrate the housing estate into the broader urban context by enhancing permeability and inviting visitors. This goal aligns with urban design literature, which views streets not only as conduits of movement but also as arenas for everyday life and social interaction (Carmona, 2010; Jacobs, 1965; Mehta, 2013). The transformation of Gadehavegaard is intended to break down the so-called “parallel society” and improve safety through increased flow and visibility, consistent with Jacobs’s (1965) “eyes on the street” principle. Beyond the mathematical exercise of reducing the proportion of non-profit family housing to 40%, the winning proposal also entails the integration of new public facilities, such as a university campus, and the redesign of recreational areas. However, as evidenced in both international and Danish contexts, such large-scale physical interventions often encounter considerable resistance, particularly when implemented in a top-down manner without meaningful local engagement (Fainstein, 2010; Madgin et al., 2016).

A resident in Gadevang, a housing estate with owner-occupied apartments adjacent to Gadehavegaard, explains: “The municipality is trying to merge us into one integrated neighborhood, but the mood in Gadevang is that we do not want one neighborhood. We are owners, they are tenants. We want our own neighborhood.” This statement reflects a widespread perception observed in the field studies across several neighboring housing estates, which distance themselves from Gadehavegaard’s negative reputation and its designation as a “parallel society” (Bech-Danielsen et al., 2021, 2023). Often, neighbors struggle to perceive the benefits of merging into an integrated neighborhood, partly due to an excessive emphasis on property values. Physical demarcations, such as barbed wire, have been installed along the boundary between the two estates, accompanied by signs posted by Gadevang residents explicitly restricting access to their area, thereby excluding residents of Gadehavegaard. This is a very physical manifestation of findings from other studies, which also highlights fears of invasion by strangers and loss of identity among residents (Bridge et al., 2011).

Among several of Gadehavegaard’s residents, the plan for an integrated neighborhood is similarly perceived as challenging, as one resident explains: “You have your own little neighborhood, and that’s where you stick, that’s where you know people, and that’s where you meet people you hang out with. I think it will always be like that.”

Among the informants living outside Gadehavegaard who were interviewed, only a few mentioned the planned new street layouts. Some consider the integration of a new internal street in Gadehavegaard a

reasonable idea but believe it is unlikely to affect them personally, as they currently have no reason to visit the housing estate. Whether the proposed campus will change this for those without specific errands in the area remains uncertain. However, the campus is expected to increase the flow of people in and out of Gadehavegaard. The more compelling question is whether the future street will function as a social meeting place. Gadehavegaard is situated in a suburban context, which may influence this outcome, as scholars such as Fillion (2001) note. The comprehensive planned changes are partly a binding task because of the PSA, but the residents of Gadehavegaard are, perhaps unsurprisingly, generally skeptical:

Our home is to be demolished, and we will be relocated or at least moved to another flat. We are very dissatisfied with the upcoming plans and are particularly critical of the street that is to be constructed through the area....Why? Unfortunately, we believe that the new plans will destroy the area.

The statement exemplifies how many residents perceive the planned transformations as shifting from place-making to place-taking, resulting in a change in the place's identity, an observation that reflects a general trend identified in our field studies across the 15 targeted housing estates (Stender et al., 2025). Although many residents are accustomed to participating in resident democracy and contributing to decision-making processes regarding local changes, their input is formally disregarded under the PSA. If residents vote against the plan, the decision is escalated to a higher authority, as its implementation is considered a binding obligation (Nielsen et al., 2023).

In this way, this transformation process contradicts not only typical Danish practice but also the widely acknowledged understanding that the long-term success of urban renewal efforts largely depends on participatory planning processes. Most residents place a high value on the existing traffic-separated environment and express concern that problems with speeding cars and scooters on surrounding streets will be brought directly to their doorsteps. The intention to create streets as new social meeting places is not reflected in interviewees' accounts, perhaps indicating that such a vision currently lies beyond their imagination and feels distant from how they perceive the functionality of existing streets. Several residents are also skeptical about the effectiveness of the proposed traffic-calming measures, questioning whether they will have a meaningful impact (Nordberg & Sundstrup, 2021). Concerns extend to the recreational qualities of Gadehavegaard, as the construction of internal streets may increase noise and air pollution from vehicular traffic. Parents are particularly worried about their children's safety, noting that after the implementation of the new street system, it may no longer be safe for children to play unsupervised in the green areas due to passing cars. One parent living in Gadehavegaard concludes:

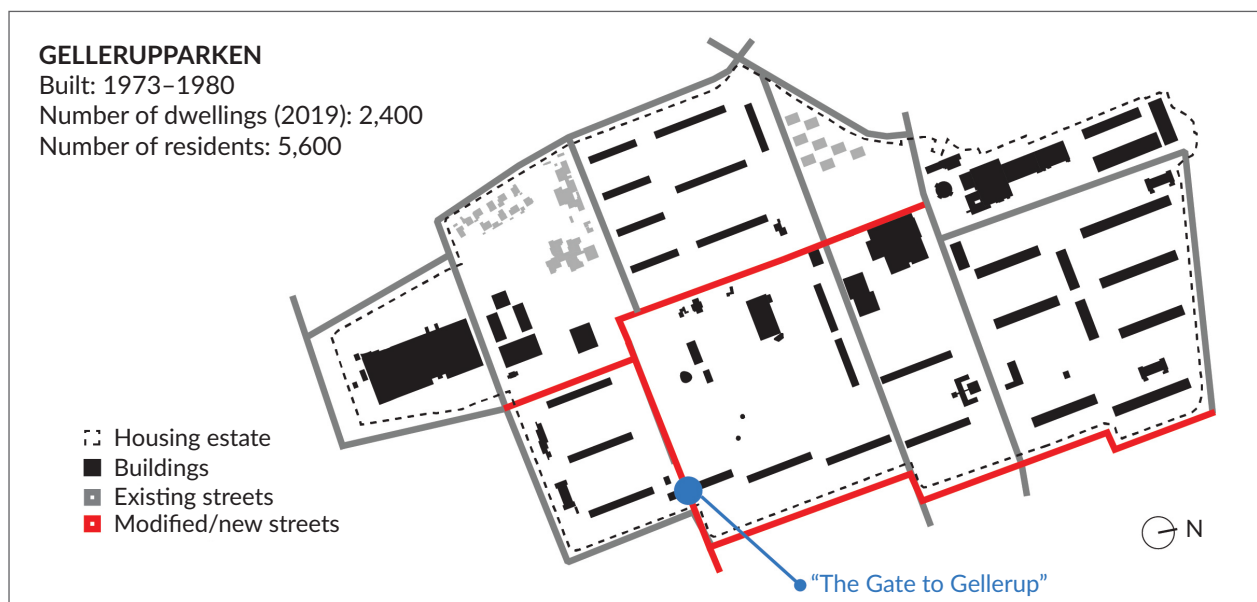
With the upcoming changes, the new street will pass right in front of my garden, which is quite depressing. I don't think it's particularly good for my children and their safety. Today, it's a good place for children to grow up. It's closed to traffic; there are playgrounds, and there are lots of other children.

In Gadehavegaard, the planned infrastructural changes are part of a broader strategy and remain in the planning phase. The visions of Arkitema Architects is illustrated in Figure 4b: a street with a social purpose, emphasizing a more human-scale approach with diverse building types of varying heights. The design integrates trees and seating areas, fostering a welcoming atmosphere and encouraging social interaction within the neighborhood, consistent with existing knowledge in the field (Gehl, 2021; Mehta, 2013).

Nevertheless, Gadehavegaard serves as a clear example of the extensive transformations envisioned across most of the 15 housing estates in our evaluation. Even prior to implementation, these planned infrastructural changes already have significant implications for residents, affecting their everyday routines and the social networks embedded in the local community. The residents are aware that the major transformations lie ahead, and several residents have already been or will soon be relocated to make room for the demolition of apartment blocks. In one end of the estate, the demolition of apartment blocks has already begun to make room for the new internal streets. The more resourceful residents who could have moved out of the estate, leaving empty apartments scattered throughout the estate.

## 7. Findings From Gellerupparken

Gellerupparken is situated approximately five kilometers west of Aarhus's city center and is further illustrated in Figure 5. The estate has been undergoing extensive transformation since 2011, a process that remains ongoing.



**Figure 5.** Map of Gellerupparken showing existing and modified or new streets.

Apartment blocks have been demolished to make room for new private homes, office spaces, sports and cultural facilities, as well as newly constructed and reconfigured streets within the housing estate. The scale of the estate contributed to stakeholders' perception of Gellerupparken as a closed enclave, particularly prior to the transformations. Despite a history of crime and gang-related activity, many residents report a high level of satisfaction with everyday life in the housing estate. Feelings of insecurity are more commonly expressed by visitors than by the residents. The establishment of a new street system has already improved accessibility to the estate and provides access to amenities and functions.

As described in the master plan, the introduction of new street systems was an early initiative, with the purpose described as follows:



The new street network has introduced traffic through the area while simultaneously dividing it into smaller neighborhoods. This has improved accessibility for car drivers and public transportation in and out of the estate, and with the addition of shops, squares, and public spaces, the main street has become the central artery of the area. (Helhedsplan for Gellerup og Toveshøj, 2024)

Even though Gellerupparken is still undergoing transformation, many residents noted that the housing estate feels more open. This perception is primarily influenced by the new city park, the removal of large trees, the demolition of apartment blocks, and the establishment of the new gateway (see Figure 6), along with new internal streets. Several residents appreciate the openness and regard it as a positive aspect of the transformation. However, many also expressed concerns, particularly regarding cut-through traffic and frequent instances of reckless driving. Field observations indicate a clear shift in movement patterns, with a marked increase in motorized drive-through traffic. This change stems directly from the new gateways, which channel traffic through rather than around the housing estate. Residents' accounts corroborated these observations, and many highlighted the negative consequences of the increased traffic. One resident, who had lived in Gellerupparken for just over two years, explained:

People are talking more about traffic now that vehicles pass through Gellerupparken. Many feel that drivers are not behaving responsibly, and the problem has become more visible and audible. Some believe that a speed enforcement vehicle should be stationed permanently, but the police have other priorities.

This testimony illustrates how infrastructural changes not only affect mobility flows but also heighten residents' concerns about safety, noise, and the quality of everyday life. What was previously a relatively enclosed and pedestrian-friendly environment has, in the eyes of several residents, been transformed into a less predictable and less secure space. At the same time, observations and interviews reveal that the new streets are increasingly used by outsiders who traverse the estate on their way to work or leisure activities. Several non-residents described using the internal streets and green areas for walking or jogging, or as shortcuts between destinations. This suggests that the estate no longer functions solely as a residential



**Figure 6.** “The Gate to Gellerup” is a symbolic and illuminated landmark, visible from the center of Aarhus at night, and enables a new street connection into Gellerupparken.



enclave but is gradually being integrated into the broader urban context. While such integration aligns with the political ambition of reducing isolation and “opening up” these areas, it also produces ambivalent outcomes: Residents experience greater exposure and disruption, while outsiders primarily perceive the estate as a transit zone rather than as a destination.

Although one goal of the transformation is to enhance safety by encouraging greater movement throughout the district, following Jacobs’ (1965) concept of “eyes on the street,” perceptions of safety vary considerably among both residents and visitors. Field studies conducted in 2022 indicate that the sense of security in Gellerupparken has not necessarily increased; rather, it has remained stable or slightly decreased. While some residents expressed concern about renewed gang activity, others attributed the unrest to the ongoing transformation itself, including demolitions and relocations. Many residents also find the recently introduced drive-through unsettling. This concern is particularly pronounced among parents in Gellerupparken, who worry that the drive-through compromises children’s ability to move independently and safely. A mother living in Gellerupparken reflected:

For me, this new plan in Gellerupparken—the traffic has been terrible....It is not child-friendly anymore. If I think that I want to move from the local area, it is not because of the people, but because I want a child-friendly area. The traffic is not for residents but for visitors.

Figure 7 illustrates one of the newly established internal streets in Gellerupparken, featuring reduced speed limits, narrow traffic lanes, designated bus lanes, and the inclusion of trees and benches to enhance comfort and rest. Despite these measures to calm traffic, many residents still express concerns about speeding along the new internal streets. As one resident stated: “Often someone drives like crazy, runs through a red light, fast. These are big streets; there are bumps, [but] it doesn’t deter people....You must be a little extra careful.”



**Figure 7.** A new internal street and recently constructed buildings in Gellerupparken, illustrating how the new streetscape introduces variation to the previously uniform apartment blocks.

Though most residents interviewed view the redevelopment positively, appreciating the improved aesthetics and openness, concerns remain about increased traffic through the housing estate as well as the ongoing

demolitions and evictions. Moreover, some residents worry that an influx of new residents and heightened activity from visitors and passersby might undermine the existing sense of community. Historically, residents recall that people used to greet everyone, but some now fear that this tradition may diminish as it becomes harder to distinguish neighbors from visitors. Several residents expressed a sense of alienation, exemplified by one individual who decided to leave the neighborhood, stating: “People in the neighborhood think it looks beautiful now...but it no longer feels like it belongs to us.” This observation also relates to the earlier point that the transformations are perceived more as acts of place-taking rather than place-making for the residents (Stender et al., 2025).

Our field studies indicate that the introduction of new functions in Gellerupparken has stimulated urban activity and drawn visitors from outside the neighborhood; however, these visitors do not necessarily interact with residents. One resident even remarked that the locals themselves have, in a way, become an attraction: “You may find that people come out and look at the animals at the zoo and then go home again.” At present, the new internal streets primarily function as physical connectors, or “zippers,” linking the housing estate to the surrounding area and improving accessibility. However, they have yet to serve as catalysts for fostering social interaction and community engagement, or as so-called “social zippers.”

## 8. Concluding Discussion

Overall, the findings from both Gadehavegaard and Gellerupparken provide valuable insights into how large-scale infrastructural interventions are conceptualized and experienced in practice. The case studies reveal the challenges of transforming residential car-free and semi-private zones into public street spaces intended to function as new types of public and social environments. The physical characteristics of both international and Danish non-profit housing estates, once celebrated as examples of modern, child-friendly planning due to features such as traffic-free zones and expansive communal areas, have become both contributing factors to and symbolic representations of the difficulties these estates now face. The shift from traffic-separated layouts to integrated street systems is often presented as a necessary correction of the modernist planning paradigm, as seen in the extensive traffic interventions planned in nine of the 15 housing estates included in the evaluation. In practice, however, these new streets can yield ambiguous results: While they may enhance accessibility and circulation, they can also introduce new vulnerabilities, particularly related to safety, the loss of child-friendly spaces, and a diminished sense of local identity, as emphasized by informants from both study areas.

The original planning of housing estates such as Gadehavegaard and Gellerupparken followed a top-down approach rooted in a standardized modernist tradition, designed and implemented before residents moved in. Today, a new wave of standardized interventions is once again being introduced from above, this time mandated by the PSA and again shaped by a generic, one-size-fits-all planning rationale. While residents generally express satisfaction with their social networks and the spatial qualities of their estates, external stakeholders often perceive them differently. Those involved in the transformation processes emphasize the need to reconfigure movement patterns, dismantle physical and social barriers, and promote social and functional mixing to create more inclusive, safe, and resilient areas. Although the transformation across nine of the 15 housing estates differs in aspects such as the specific nature of traffic interventions, notable similarities reveal a shared underlying rationale, one that also resonates with themes in contemporary urban planning literature. Paradoxically, the planned and ongoing interventions increasingly reflect a generic

response and a narrowly framed understanding of the challenges and solutions facing these estates, often with limited sensitivity to local conditions. If not carefully adapted, overly rigid and time-bound solutions risk undermining the spatial and social qualities that define these non-profit housing estates.

Without careful attention to local socio-spatial dynamics, including resistance from neighboring communities to integration efforts, renewal and infrastructural initiatives are unlikely to achieve their intended goals of inclusion and cohesion. In Gadehavegaard, residents of adjacent estates actively resist integration with the stigmatized housing estate, preferring to maintain or reinforce spatial and social separation. At the same time, large-scale physical interventions generate significant frustration among residents, who experience daily disruptions, uncertainty, and erosion of local social networks, even before infrastructural implementation begins. Before new streets can be constructed, apartment blocks must be vacated and residents relocated, a process that takes time. Moreover, plans for extensive transformations create uncertainty among residents, prompting several resourceful individuals with the means to seek alternative housing before transformations begin, leaving empty apartments behind. This pattern recurs across the 15 targeted housing estates and is evident in Gadehavegaard.

In Gellerupparken, the introduction of new streets has altered movement patterns and improved physical connectivity, but these changes have not translated into a greater sense of security for residents or strengthened social ties with visitors passing through. While residents acknowledge the visual improvements, many describe the housing estate as less child-friendly due to traffic moving closer to their homes and the loss of car-free recreational space. Although the majority of residents report feeling secure moving around the area after dark, an increasing share indicates that they do not. Similarly, the proportion of respondents who feel Gellerupparken is a good place for children to grow up has declined. These findings suggest that spatial permeability, though often promoted as a driver of safety and cohesion, does not, by itself, generate meaningful social interaction or a stronger sense of security.

In Gadehavegaard, the architectural visualization (Figure 4b) illustrates increased building density, downscaling, and greater variation in the built environment, complemented by greenery, trees, and street furniture intended to establish the street as a social zipper. While these visualizations are compelling in many respects, they arguably reflect an urban, high-density context rather than the primarily suburban setting of Gadehavegaard. Even if a campus and other functions are successfully implemented, it will likely take considerable time before the housing estate can be regarded as a truly mixed-use environment with the density required for the street to function effectively as a social meeting space. Additionally, transforming semi-private recreational areas between apartment blocks into accessible public space remains a central but highly complex challenge.

In Gellerupparken, where a 30 km/h speed limit has been introduced and trees and benches have been installed along the streets (Figure 7), residents continue to report speeding. If cars remain dominant on these newly built internal streets, due to both travel distances and the suburban logic embedded in the street design, the potential for streets to serve as social spaces is undermined. Research on streets as social meeting places typically focuses on urban contexts, where walkability and street life are already more established. In suburban zones, vehicles remain the primary means of getting from point A to point B. Consequently, the question remains: How should a street be designed in a suburban context if it is truly to function as a social zipper?

The implementation of PSA policy has significantly eroded Denmark's longstanding tradition of participatory planning, replacing local democratic decision-making with centrally administered spatial restructuring initiatives. Extensive physical transformations, such as constructing new streets without participatory processes, risk undermining local identity and reinforcing the stigmatization of housing estates. From the residents' perspective, such top-down interventions can result in place-taking rather than place-making, as everyday experiences and emotional attachments to place are often overlooked. The cases of Gadehavegaard and Gellerupparken further demonstrate that spatial interventions are far from neutral; they are deeply entangled in political agendas and dominant narratives of "parallel societies." This reveals a spatial double standard in Danish urban policy: Whereas urban areas such as Copenhagen and Aarhus focus on reducing car traffic, eliminating parking, and transforming streets into pedestrian-friendly environments, marginalized neighborhoods are subject to policies that introduce car traffic as a tool for social control and integration. This contradiction highlights a deeper asymmetry regarding whom urban design is intended to serve and whose everyday life it seeks to shape.

In conclusion, the street as a "social zipper" remains a powerful metaphor but a fragile practice. The outcomes and impacts of the Danish transformations in the 15 targeted housing estates will be important to monitor as part of the ongoing evaluation. Over time, these cases may contribute to a more nuanced understanding of how newly constructed streets can function as social meeting spaces within suburban contexts. If streets are to serve as true "social zippers," they must be more than physical connectors; they must emerge from an inclusive, context-sensitive design process that recognizes residents' everyday practices, concerns, and sense of belonging. Otherwise, there is a considerable risk that these interventions will replicate the very exclusion and fragmentation they are meant to counteract. Our findings highlight the need for context-sensitive, participatory, and multi-scale approaches. Streets should not only be seen as infrastructure but as social and political arenas where conflicting interests, past experiences, and imagined futures intersect.

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### Conflict of Interests

The authors declare no conflict of interests.

### Data Availability

Due to the nature of the research, data sharing is not applicable to this article.

### LLMs Disclosure

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