GEOGRAPHIES OF HANGING OUT IN THE POST-WAR, HIGH-RISE NEIGHBOURHOOD

Master Thesis
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“Dit is Delft, dit zijn de straten”

Scheme015, 2007

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ABSTRACT

This thesis explores the interrelatedness between the design of the built environment of post-war, high-rise neighbourhoods and the behaviour of the youth, focussing on the socio-spatial elements that can be used to enhance social cohesion between the youth and other users of public space.

The research combines theory, spatial analysis, reference projects, ethnography, and participatory action research. Using Voorhof as a case study, the behavioural patterns of youth are analysed in order to understand their lived experience and socio-spatial needs. Through informal conversations, workshops, and evaluation, the research aims to propose interventions needed to extend and disperse youth presence throughout the neighbourhood.

It starts by identifying the modernist and functionalist design principles of post-war, high-rise neighbourhoods as an important contributor to a monocentric system of perceived nuisance, as opportunities for interaction, which are necessary for the personal development of adolescent youth, are limited within post-war, high-rise neighbourhoods. Ethnographic research and spatial analysis are used to gain insight into the necessary conditions of places of interaction and to identify the potentialities for extending a network of interaction throughout the neighbourhood. Through participatory action research and analysis of reference projects, the socio-spatial elements within the geographies of hanging out are identified, which are necessary to activate these neighbourhood potentialities.

Findings from these different lines of inquiry are used to develop a framework of strategic actions concerning the youth's need for dedicated facilities, appropriation, interaction, and social support structures, while simultaneously acknowledging the perceptions of other users of public space. In doing so, the framework aims to facilitate coexistence and reduce conflict in order to enhance social cohesion.

Ultimately, this thesis highlights the need for thorough participatory research methods in addressing the geographies of hanging out, arguing that meaningful socio-spatial interventions require a deeper understanding of the youth's lived experience.

keywords:
loitering youth, youth behaviour, interaction, appropriation, ethnography, strategic actions

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01

INTRODUCTION



fig. 1.1: view from the author's front door

POSITIONALITY

In processes of participatory community research, it is essential to asses the researcher's positionality in relation to the researched community (Muhammad et al., 2015). The identification of unequal power relations and the researcher's privilege are necessary, as personal background can influence both the research process and the outcomes.

As a native Dutch man, who has grown up in suburban, residential neighbourhoods, I acknowledge that I have spend my formative years in a privileged environment. Therefore, my experiences on growing up, acting out and others' perceptions of my behaviour are likely to differ from the researched community.

Merrian et al. (2001) argue that the researcher's positionality can shift. Whereas earlier research assumes a dichotomy in which the researcher is either an insider or an outsider, Merrian et al. point out that, through research, especially ethnographic research, an outsider's perspective can shift towards that of an insider. Bayeck (2022) elaborates on the researcher's ability to change positionality and defines the intersectionality of space, context and identity as the basis for the positionality of a so-called *in-out-sider*.

It is evident that based on identity, I am an outsider in this community. Having grown up in a different environment, being older and having gone through different levels of education, distinguish me from the researched community and can therefore affect the research process. However, common ground can be found between the researcher and the researched community in relation to space. Bayeck (2022) notes that "space emerges from interactions between individuals and their physical environment, and is experienced" (p. 2), and by personally having lived in the studied neighbourhood since 2020, I can, to a certain extent, be considered an insider in this community. While interacting with the physical environment may differ, the shared use of public space allows for overlapping experiences. Context works under a broader definition and "refers to situational, implicit information, and underlying cultural systems that explain and inform the behaviors, actions, and interactions of people in a country or region" (Bayeck, 2022, p.2). Context is therefore dependant on identity and space. Often differing in underlying cultural systems, stemming from different backgrounds, our values will not always align, but on a larger scale, at national level, we have inherited similar educational systems, through which certain practices are instilled in us, providing a shared frame of reference.

My position as an *in-out-sider* provides me with the basis needed to do ethnographic research. At the same time, it is important that I, as a researcher, remain reflexive and critical. The perspective of an insider will allow me to gain insights into the community, otherwise difficult to obtain. Through the lens of an outsider these insights can be analysed and ensure a critical, but tactfully researched project.



fig. 1.2: still from the movie La Haine (Kassovitz, 1995)

MOTIVATION

The topic of *hangjongeren* first sparked my interest during the first year of the MSc Urbanism. Having always been interested in the interrelation between the built environment and the social dynamics of the city, I have used this interest as a guiding principle throughout my projects. Tasked with a redevelopment assignment for Utrecht's Kanaleneiland, a neighbourhood not unlike the one I was living in, I started by exploring statistics concerning residents' opinion and found that a large portion of Kanaleneiland's population felt bothered by the presence of loitering youth. Using this as a starting point for the research, I found that little research had been done on this community.

While continuing my education, this one topic continued to resonate with me. Both consciously and unconsciously, I began to observe the presence and behaviour of youth groups around me. I found that, despite the many differences, my personal behaviour during adolescence was not entirely dissimilar from the so-called *hangjongeren*. Acting out in public space during one's formative years seems to occur across cultures, regions and income groups. Nonetheless, the label *hangjongere* is not universally applied to every adolescent; I, for one, have never felt this term applied to me.

As an urbanist, I wondered whether a relationship could be established between the existence of *hangjongeren* and the built environment. With consideration of the social stigma surrounding the community, I try to dissect the connection between behaviour and spatial context, not trying to influence youth behaviour, but rather improve the infrastructure required.

CHILDREN MUST HAVE TIME TO DO NOTHING AND THE SPACE WITHIN WHICH TO DO IT.

Aitken, 2002, p.16

GLOSSARY

youth
To prevent further stigmatization, terms such as “hangjongeren” or loitering youth are largely avoided. Instead, the terms youth, adolescents or teenagers are used as a totum pro parte. When the term youth is mentioned in this research, it is used to depict the adolescent youth who, most often in groups, spend large parts of their day in public.

youth behaviour
Youth behaviour contains any behaviour often associated with the aforementioned youth. This includes, but is not limited to, the activity of hanging around and vandalism.

02. FRAMING

THE PROBLEM



‘Overlast door hangjongeren is van alle tijden’

fig. 2.1: ‘Nuisance by loitering youth is nothing new’ (Schmidt, 1994)



Bewoners Roland Holstlaan willen hun nachtrust terug

28 juni 2025, 09:37 Algemeen

DELFT - Al zo'n vijf jaar lang is het een terugkerend tafereel op de parkeerplaats naast basisschool De Eglantier aan de Roland Holstlaan: luidruchtige groepjes jongemannen in auto's en op motoren, rokend, etend, lachend en voetballend tot diep in de nacht. Voor de bewoners van de flat ernaast is de maat inmiddels vol. De overlast is uitgegroeid tot een bijna dagelijkse bron van stress, slapeloosheid en een gevoel van onveiligheid.

De betrokken hangjongeren – "gezien de leeftijd eigenlijk meer hangmannen" – komen volgens de bewoners van buiten de wijk en gebruiken de parkeerplaats structureel als ontmoetingsplek. "Overdag en 's avonds arriveren ze in groepjes, installeren zich met snacks en drank van de snackbar en roken hasj", aldus een van de bewoners. "Zodra het begint te regenen, verplaatsen ze zich naar hun voertuigen, met draaiende motor. In de nacht verlaten ze de plek, vaak pas na een potje voetbal en een hoop kabaal." Wat achterblijft? "Rommel, dozen, plastic zakken, bekers, en uitgeputte bewoners."

Gemeente neemt maatregelen tegen overlast Voorhof

17 juni 2023, 10:00 Algemeen

DELFT - Ondernemers in de wijk Voorhof slaan alarm over de toenemende overlast veroorzaakt door een groep jongeren. Zo'n twintig jongeren zorgen voor vernielingen, diefstal en intimidatie, waardoor zowel winkelend publiek als ondernemers zich onveilig voelen. De ondernemersvereniging, bekend als de Stichting Ondernemersfonds Voorhof (SOV), heeft een brief geschreven aan burgemeester Marja van Bijsterveldt en dringt aan op actie om de veiligheid van bewoners en ondernemers te waarborgen.

Door Cheyenne Toetenel

Volgens een woordvoerder van SOV, die anoniem wil blijven, loopt de situatie steeds verder uit de hand en moet er snel ingegrepen worden. "Het is in coronatijd begonnen en niet meer overgegaan. De overlast uit zich onder andere in vernielde etalageruiten, beschadigde eigendommen en brandstichting van voertuigen. Er wordt voor duizenden euro's schade aangericht, en het komt zelfs zo ver dat de verzekering niet meer uitkeert of de premie gigantisch verhoogt. De angst voor persoonlijke bedreigingen en vernielingen weerhoudt de ondernemers ervan om op te treden tegen de groep."

Stadsgesprek over rellen oudjaar en jeugdcriminaliteit

20 januari 2024, 10:00 Algemeen

DELFT - Delft werd tijdens oud en nieuw geteisterd door zware rellen, veroorzaakt door jongeren in Delft-West (Voorhof, Buitenhof en Tanthof-West). Was dit een incidentele uitschieter of heeft Delft een serieus probleem met jeugdcriminaliteit? Daarover gaat de komende editie van stadsgesprek De Staat van Delft op 26 januari in OPEN.

Door Julia Jouwe, Marcel de Jong en Nico Jouwe

"Een onveilige buurt." Zo omschrijft een Poptahofbewoner (naam bij de redactie bekend en niet op de foto) Delft-West. "Er is veel criminaliteit; jongeren die zich met een dreigende houding rondom de flat ophouden. Altijd in een groep, nooit alleen." De rellen op oudejaarsnacht vond hij 'afschuwelijk': "Ik wilde met mijn dochter vuurwerk afsteken, maar we durfden niet naar buiten." Ook ondernemers als Kees Romijn van Romijn IJzerwaren en Gereedschappen, ervaren overlast. Hij heeft regelmatig een kapotte ruit gehad door toedoen van jongeren. "Heel vervelend, maar ik neem het nooit persoonlijk." Romijn heeft zijn zaak inmiddels gesloten, niet door de overlast, maar omdat hij geen opvolger kon vinden.

fig. 2.2: recent articles on nuisance by youth in Voorhof (Delft op Zondag, 2025; Toetenel, 2023; Jouwe et al., 2024)

SOCIETAL CONTEXT

The term “hangjongeren” was first coined in 1994 (Van Gessel, 1995), literally meaning hang-around youth. This refers to the activity this group is best known for, hanging around, often perceived as useless and aimless by others (CCV, 2008). However, hanging around is an essential part of identity forming for these groups. Through observing and participating in public space, the youth obtain relevant information to use in other contexts (Lieberg, 1995). The street offers an opportunity to meet each other without parental supervision and test societal limits.

The youth and their behaviour in public space has been a part of public discourse for decades (CCV, 2008). While their appearance may have changed throughout the years, from mopeds to fatbikes, and leather jackets to sportswear, their behaviour, and especially other’s perception thereof, shows strong similarities (Althoff, 2005). The perception of useless and aimless is often reinforced by the media. They are known to influence public opinion concerning youth in disadvantaged neighbourhoods. Through selective reporting the local media create crime waves, depicting young men, often ethnic minorities, as the predominant offenders. However, there is no statistical basis which indicates an overrepresentation of youth in criminality. The usage of derogatory terms such as hangjongeren, often used in media, reinforces stereotypes and thus creates further tension between adults and youth in public space (Devlin, 2006). Besides the negative media coverage, political discourse is also focused on the problematization of certain youth groups (De Koning, 2016). It is believed by youth that the stereotypes created by the media and negative political discourse are fuelling each other (Devlin, 2006, p.33). Calls for less derogatory terms for the youth who spend large parts of their day in the public space can be retraced to 1998 (AD), but have had little effect so far.

These negative stereotypes are known to create a stigma; “we apply the term stigma when elements of labelling, stereotyping, separation, status loss, and discrimination co-occur in a power situation that allows the components of stigma to unfold” (Link & Phelan, 2000, p. 367). The stigmatization of certain groups within the population, among whom young men, can lead to a broader stigmatization of an entire neighbourhood (Wacquant, 2008). Especially when the stigmatized social group is highly visible, neighbourhood stigmatization frequently follows. Therefore, youth who spend most of their time in public space, and thus are a highly visible group, will often induce a territorial stigma. This in turn can induce psychological distress among residents (Tran et al., 2020) and negatively affect the social capital of the areas inhabitants (Warr, 2005).

The negative stereotypes concerning youth in public space can often be retraced to their behaviour. While youth use public space to develop their identity and test societal boundaries (Lieberg, 1995), adults more often use the urban space according to its intended use, as urban space has long been produced according to the spatial hegemony of adults (Valentine, 1996). This perspective of the public sphere as a heterogeneous space can create conflict between the youth and other users of public space (Visser et al., 2015): actors have different interpretations and uses of the same environment. And as the public space is designed according to the ideals of adults (Valentine, 1996), youth groups have had to appropriate micro-spaces as “niche territories within the wider neighbourhood environment that young people actively occupy, appropriate and transform for their



▲ **De politie heeft vrijdagavond 26 december een grote groep jongeren gecontroleerd bij de tramhalte aan de Papsouwselaan in Delft.** © District8

Burgemeester laat agenten tot in nieuwe jaar preventief fouilleren na ‘ernstige overlast’ in Buitenhof en Voorhof

fig. 2.3: “Mayor authorizes preventive stop-and-search by police into the New Year after ‘serious disturbances’ in Buitenhof and Voorhof.” (Tielemans, 2025)

own purposes" (Gray & Manning, 2022, p.1407). These competing claims of public space are a catalyst of conflict between adults and teenagers (Childress, 2004).

The youth themselves, but also adults and other users of public space stand to benefit from a resolution over the conflict concerning public space. Younger children tend to feel intimidated by groups of older youth who hang around (Kullberg et al., 2021). Furthermore, the perceived safety of the inhabitants, specifically the perceived safety of young women and the elderly population, is negatively affected by the presence of youth groups, especially in neighbourhoods with high levels of unemployment, neighbourhoods with inhabitants with a non-Western immigration background and neighbourhoods with low housing prices (Liedelmeijer et al., 2009).

The ongoing conflict between the youth and adult population reinforces the continuing narrative of problematic youth often provided in public discourse. Public discourse concerning youth behaviour is shaped more by adult perceptions than by young people's actual behaviour (Ruigrok et al., 2017). As youth are frequently framed as problematic for not using public space according to its intended functions (Valentine, 1996). As mentioned before, the negative public discourse, created by media and politics, heavily stigmatizes the youth. This stigmatization can have significant consequences for the lives of young people, as stigmatized youth are more likely to experience overpolicing in the form of frequent ID-checks and fines (Kullberg et al., 2021). Research shows that recurring police stops among youth can result in high levels of emotional stress during the stops and greater posttraumatic stress after the stop (Jackson et al., 2019). Alongside the overpolicing, the stigma surrounding youth groups can limit their engagement in society, reducing future beneficial opportunities (Deakin et al., 2022).

Furthermore, the social cohesion of the neighbourhood suffers from the limited societal engagement of youth, as social relations between groups are defined as a key component of social cohesion (Schiefer & Van der Noll, 2017). In turn, mutual tolerance between groups influences these social relations. The conflict arising from competing claims of public space and perceived unsafety negatively affects this mutual tolerance and, consequently, social cohesion. Therefore, the youth have a vested interest in reducing the stigma surrounding hanging out, reducing the experienced nuisance from their behaviour, and a resolution over the conflict concerning public space, as it indirectly impacts their future opportunities and can enhance social cohesion in the neighbourhood, eventually lessening stereotypes (Pettigrew & Tropp, 2006).



fig. 2.4: Voorhof, Delft (Gundlach, 2018)



fig. 2.5: Slotermeer-West, Amsterdam (Gemeente Amsterdam, n.d.)



fig. 2.6: Moerwijk, Den Haag (Van de Biezen, 2019a)

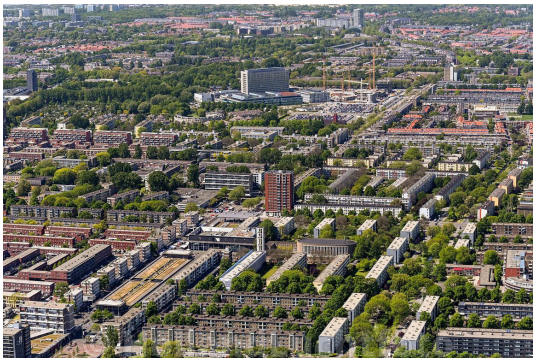


fig. 2.7: Morgenstond, Den Haag (Van de Biezen, 2019b)

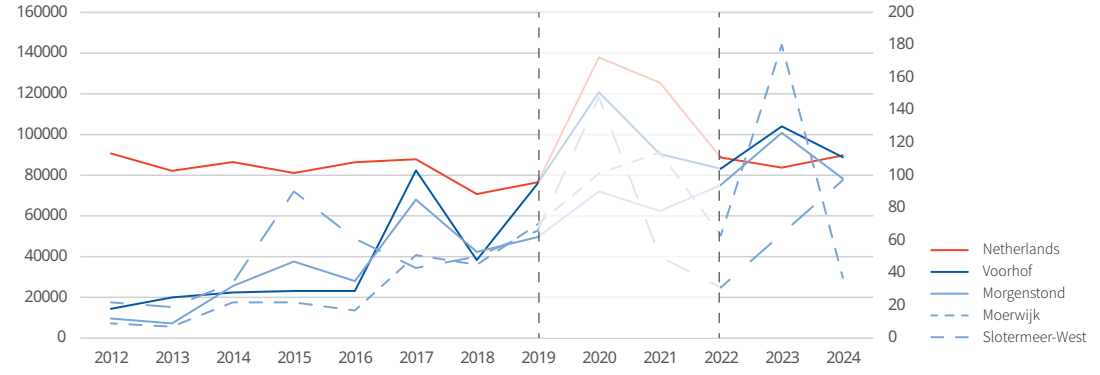


fig. 2.8: reports of nuisance by youth (Politie, 2025)

SPATIAL CONTEXT

The stigmatization and stereotyping of youth, and by extension the neighbourhood itself, are known to influence perceptions of disorder (Sampson & Raudenbush, 2004). Groups of youth can even be perceived as a nuisance, without demonstrating disruptive behaviour (Kleinhans & Bolt, 2014). While the number of reports concerning disturbances by youth in the Netherlands have remained at a stable level, with an exception during the CoViD-19 crisis, the number of reports in post-war, high-rise neighbourhoods are on the rise. This can be illustrated through analysing the number of reported nuisance by youth in neighbourhoods similar to the selected case study: Voorhof, Delft. Similar neighbourhoods are selected on different criteria which are characteristic of the post-war, high-rise neighbourhood: population density, Open Space Ratio and building age (CBS, 2025a; PBL, 2024). Population density in combination with Open Space Ratio are used to filter the high-rise neighbourhoods, while building age is used to indicate the time period in which the neighbourhood is built. Therefore, the criteria on which comparable neighbourhoods were selected are:

```
"bevolkingsdichtheidInwonersPerKm2" > 10683
        AND
"bevolkingsdichtheidInwonersPerKm2" < 13057
        AND
"OSR_24" > 1
        AND
"m_bouwjaar" > 1950
        AND
"m_bouwjaar" < 1975
```

Applying these three criteria as a filter to identify neighbourhoods comparable to Voorhof, the neighbourhoods of Moerwijk and Morgenstond in The Hague, as well as Slotermeer-West in Amsterdam, were selected. The graph illustrates that these neighbourhoods have exhibited a similar increase in youth-related nuisance over the past ten years.

The design of these neighbourhoods is grounded in modernist theory, this research aims to relate the design of the functionalist, modernist neighbourhood to the behaviour of youth using theories on the interrelation of the designed environment and behaviour in the public space (Jacobs, 1992; Lieberg, 1995), the way in which an environment can support or oppose certain types of behaviour (Franck & Stevens, 2007) and the disregard of the lived experiences of actual user of the public space (Lefebvre, 1996; Chase et al., 1999).

As has been mentioned before, youth and adult use of public space can differ heavily. Neighbourhoods are often designed according to the behavioural patterns of adults, often referred to as the spatial hegemony of adults (Valentine, 1996), causing conflict between adults and adolescents in public space (Childress, 2004). This is especially the case in modernist neighbourhoods, where the functionalist identity is even more focussed on the behavioural patterns of adults. For the youth, the neighbourhood is a place of personal development (Lieberg, 1995), they use public space to test different behaviours and societal boundaries, but also to get away from adult supervision. Two types of places are needed for this: places of retreat, necessary for providing privacy, and places of interaction, where the youth are able to confront the adult world and develop themselves. However, due to functionalist planning principles, a disbalance exists between these types of spaces, resulting in disproportionate amounts of nuisance.

Functionalist urban planning principles can also be identified as a contributing factor to the disproportionate amount of nuisance



fig. 2.9: model of Voorhof (Gemeente Delft, 1969)

when considering the concepts of tight and loose urban space developed by Franck and Stevens (2007). The looseness and tightness of a place define the degree to which public space allows for unplanned behaviour, and are therefore dependant on the sentiment of its users. In the modernist neighbourhood, the different functions of the neighbourhood are not mixed, but rather spatially subdivided. Therefore, different types of behaviour are expected in different areas of the neighbourhood, but more importantly, other types of behaviour are not expected, and therefore unwanted. Youth behaviour, which is different than the behaviour of adults for whom the neighbourhood is designed, is therefore often perceived as a nuisance. The modernist, post-war neighbourhood can therefore be considered a *tight* space.

This thesis will focus on the neighbourhood Voorhof in Delft, which is representative of modernistic planning principles through its strong segregation of urban functions. This strong segregation of functions results in a limited number of areas that can be considered places of interaction. Thus, opportunities for youth to test societal boundaries are limited. The few available places of interaction are therefore likely to experience a higher volume of youth compared to neighbourhoods with less strict zoning and more places of interaction, especially when the population density is considered alongside this. Voorhof is the most densely populated neighbourhood in Delft (CBS, 2025a), which contributes to a greater presence of youth.

To further illustrate the difference in youth behaviour across neighbourhoods, a comparison can be made between the inner city of Delft (Binnenstad) and Voorhof. Although the exact number of reports of nuisance by youth is nearly identical (110 in Binnenstad and 111 in Voorhof), the experienced nuisance from loitering youth is almost twice as high in Voorhof. The inner city of Delft is less strictly planned, resulting in places of interaction that are more evenly spread throughout the neighbourhood and a lower level of perceived nuisance from youth at each location.

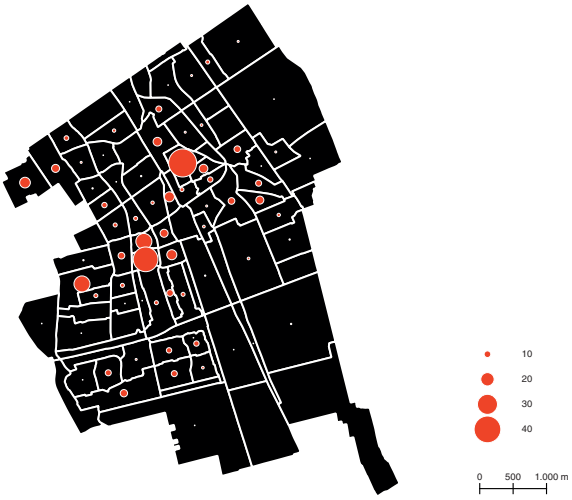


fig. 2.10: reports of nuisance by youth per neighbourhood in Delft in 2024 (Politie, 2025)

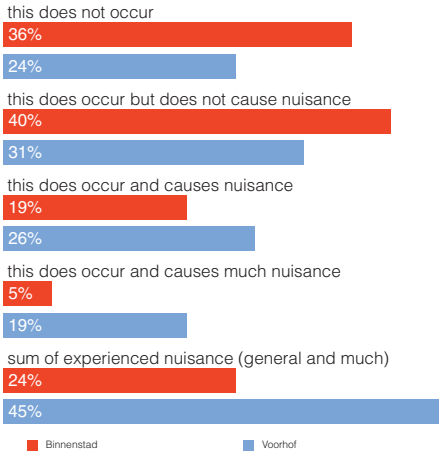


fig. 2.11: neighbourhood survey on loitering youth in 2023 (Gemeente Delft, 2025)



fig. 2.12: youth around the Debussyflat, Buitenhof (Lucker, 2025)

RESEARCH AIM

Modernist neighbourhoods have been thoroughly studied and critiqued by sociologists, philosophers and, most prominently, urban planners, often highlighting the negative effects on the liveliness of the neighbourhood. Most famously, Jane Jacobs (1992) identifies the functionalist ideals of modernist planning as the root cause of the lack of street life. While many authors shortly touch upon the effects of the modernist planning on the younger generation, their analysis tends to concentrate on children, thereby largely overlooking adolescents.

This does not suggest that adolescent behaviour and its relationship to the urban environment has not been studied. On the contrary, the influence of the urban environment on adolescent behaviour have been reviewed extensively. Nevertheless, within this body of knowledge, the specific relationship between adolescent behaviour and the modernist, post-war, high-rise neighbourhood is not made evident.

Within Dutch context, researchers have made an effort to establish relationships between the lived experience of loitering youth or “hangjongeren”, and public space. These studies have either called for more youth participation in policy formation (Van Lieshout & Aarts, 2008) or explored the youth’s perspectives of their neighbourhood (Visser et al., 2015; Kullberg et al., 2021). While these studies do offer valuable sociological insights, they do not propose spatial interventions, as the perspective of urban design is not incorporated.

Policy-oriented reports commissioned by the Dutch government on how to address disturbances associated with youth presence in public space articulate the need for role models within the neighbourhood (CCV, 2008; Liedelmeijer et al., 2009). Spatial interventions are sparsely mentioned, often stating the addition of small-scale sports facilities or so-called “hangplekken” (hang-out spots) as possible solutions to disruptive behaviour. These hang-out spots are often implemented as temporary structures, made from shipping containers, and placed on the urban fringes, locations where interaction with other residents is nearly impossible. Comprehensive strategies that address youth behaviour through spatial interventions at the scale of the neighbourhood are lacking.

This thesis aims to establish a clear connection between the built environment of the Dutch post-war, high-rise neighbourhood and adolescent behaviour. By integrating critiques of modernist planning with insights of behaviour studies on adolescents in public space and specific research on the Dutch context, this research aims to develop a spatial strategy, addressing the needs of the youth, as well as the experienced nuisances.

RESEARCH QUESTIONS

What socio-spatial interventions can be taken to enhance social cohesion of adolescent youth in post-war, high-rise neighbourhoods through participatory research methods?

SQ1:
analysis

What socio-spatial aspects affect the behaviour of the youth and how is this related to the design of post-war, high-rise neighbourhoods?

SQ2:
ethnography

What are the lived experiences and wishes of the youth in Voorhof concerning public space?

SQ3:
design

How can the design of public spaces in post-war, high-rise neighbourhoods lessen the density of nuisance by youth at one centrality?

PROBLEM STATEMENT

Reports of nuisance associated with loitering youth in post-war, high-rise neighbourhoods in the Netherlands are on the rise. These forms of nuisance negatively affect the perceptions of safety and contribute to the stigmatisation of youth, potentially limiting their future opportunities, societal engagement, and, thereby, social cohesion between the youth and other users of public space.

While the behaviour exhibited by the adolescent youth is an integral part of their development, and the testing of societal boundaries occurs across neighbourhoods, youth in post-war, high-rise neighbourhood are perceived as a greater source of nuisance. This can be attributed, in part, to modernist planning principles, which spatially concentrate disruptive behaviour at one centrality.

Despite a vast body of literature addressing the interrelatedness of the built environment and adolescent behaviour, research concerning the effects of modernist planning on the spatial affordances of adolescent behaviour is lacking.

03. METHOD


SAND THEORY



fig. 3.1: youth centre The Mall (TU Delft, 2026a)

RESEARCH FRAMEWORK

This research is structured around three phases: analysis, ethnography, and design. This framework is also reflected in the subquestions. The analysis focuses on the socio-spatial conditions of the neighbourhood and aims to gain a deeper understanding of the environment. Through a layered approach, the neighbourhood is examined across multiple dimensions that influence youth behaviour. This phase is crucial in identifying the conditions that contribute to the issues addressed in this thesis. It also paves the way for ethnographic research, Wacquant (2008) argues that, especially in marginalised neighbourhoods, ethnographic research should be grounded in spatial analysis.

The second phase of the research focuses on the lived experience of the neighbourhood. Through ethnographic research, the non-visible elements of the case study are explored. This method is used because it provides a more detailed understanding of the use of public space, in particular in ethnically diverse neighbourhoods (Rishbeth et al., 2018). The results from ethnographic research are used to bridge the gap between academic fieldwork and design.

Ethnographic research will take place at the local youth centre, The Mall. The Mall organises evenings for the local youth, divided by gender and age groups. By attending sessions organised for male youth in age group 16 and above, information is gathered which forms the basis for ethnographic mapping and personas. Initially, no formal research will be done during these sessions, as establishing a relationship of trust in community university partnerships is a vital step in ethnographic youth research (Dawaele & Cloostermans, 2025). The availability of an intermediary at The Mall, like youth workers, further reinforces trust and support engagement in research. This relationship of trust forms the basis for informal conversations concerning the use of public space. Concerning participation, ethical approval was granted by the Human Research Ethics Committee TU Delft (ID: 6490, appendix b).

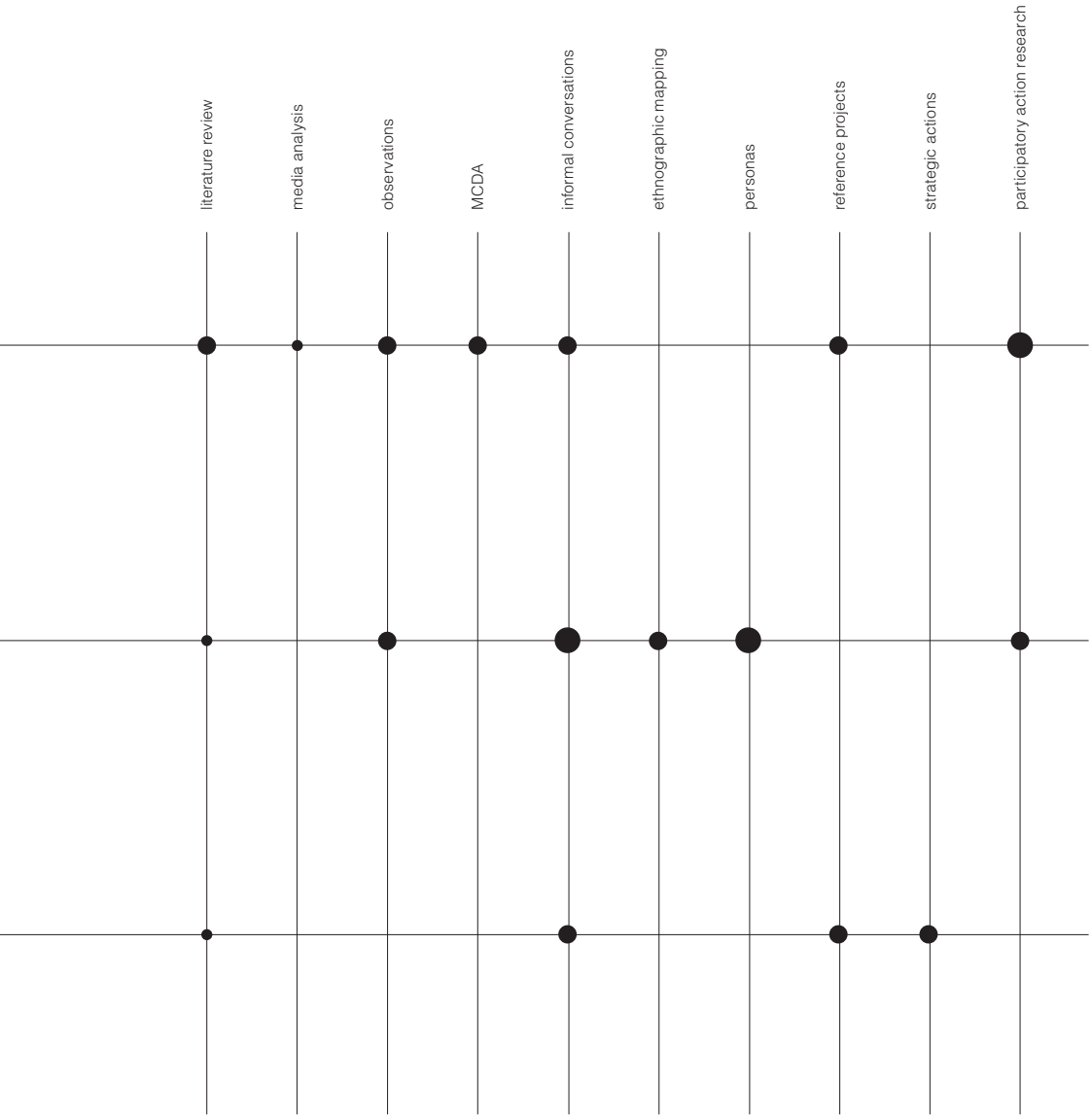
Building on the conclusions from the ethnographic research, locations will be identified for the development of design interventions. The design itself will adopt a participatory action research framework, being informed by participant input, as well as being used for participant evaluation.

This structure is used not only to bridge the knowledge gap on the interrelatedness of the built environment of the post-war, high-rise neighbourhood and youth behaviour, but also to present a guide on the involvement of the community in design practice.

What socio-spatial interventions can be taken to enhance social cohesion of adolescent youth in post-war, high-rise neighbourhoods through participatory research methods?

	subquestion	*aim*	*intended outcome*
SQ1: analysis	What socio-spatial aspects affect the behaviour of the youth and how is this related to the design of post-war, high-rise neighbourhoods?	To understand what neighbourhood elements, social and spatial, affect the recreative behaviour of the youth in public space and explore the neighbourhood potential in the geographies of hanging out.	A typology in socio-spatial elements commonly found in the geographies of hanging out, as well as a set of maps, dissecting different social and spatial conditions which indicate where youth are more commonly found in public space.
SQ2: ethnography	What are the lived experiences and wishes of the youth in Voorhof concerning public space?	To understand the (non-) visible elements of the neighbourhood which exhert an influence on the youth and youth behaviour and gain deeper understanding of their needs and wishes in public space.	An exploration of neighbourhood specific aspects which influence youth behaviour for which no basis can be found in literature, creating and visualising personas as a narrative device, and evaluation of different socio-spatial aspects.
SQ3: design	How can the design of public spaces in post-war, high-rise neighbourhoods lessen the density of nuisance by youth at one centrality?	To draw conclusions from the analytical and ethnographic research, and be able to apply these conclusions in form of spatial interventions, while remaining academically relevant.	A set of spatial interventions, translated into strategic actions. The strategic actions are visualised and tested in three locations in Voorhof.

METHODOLOGICAL FRAMEWORK



literature review

why? Existing literature is reviewed in order to gain a greater understanding of wat has already been discovered concerning adolescent behaviour and its relationship to the built environment.

how? Scholarly articles and books are critically reviewed and used throughout the project to lay the groundwork for spatial analysis, ethnographic research and design. All literature used is cited according to APA 7th edition format.

media analysis

why? Diverse media sources are used to underpin the societal conflict surrounding the topic. Local media sources give a greater insight into the current areas of interest within the chosen case study.

how? Historical national newspaper articles are retrieved through Delpher. Recent (local) media sources could be retraced through their individual online webpages.

observations

why? During this research, a case study will be used to investigate the spatial conditions in the geographies of hanging out. Observations at the chosen can help to understand how space is used.

how? Living in the chosen case study, unstructured observations are an ongoing process. Youth behaviour or consequences thereof are photographed throughout this research and do not follow a systematic approach.

MCDA

why? The collected spatial data comes in different geometries. In order to be able to draw clear conclusions, Multi-Criteria Decision Analysis (MCDA) is used to aggregate the collected data. All collected data will be standardised and given a weight in order of

how? importance. After this, the data will be aggregated in a grid patterns consisting of 100 m grid squares.

informal conversations

why? Informal conversations with the youth will provide a greater insight into the patterns of their behaviour. These conversations ensure that the voice of the youth is represented in this

how? research.

Conversations with the youth will be held at multiple moments throughout the research in a trusted environment under supervision of a youth worker.

ethnographic mapping

why? Ethnographic mapping is used to provide a greater insight into how non-spatial, social dynamics relate to the built environment. It will establish a connection between behavioural patterns and the spatial conditions of

how? the area.

Data collected during observations and informal conversation will be collected and visualised alongside the built environment.

personas

why? As participant privacy is of great importance when researching youth, personas are constructed to illustrate the lived experience and main challenges within the built environment.

how? Through informal conversations, behavioural patterns can be recognized and depicted in a fictional, yet evidence-based persona.

reference projects

why? The current design of the neighbourhood is not catered to the needs of the youth. While best practices for the studied community do not exist, there are reference projects available which have been designed to cater to hyperdiverse neighbourhoods, or which are known for the presence of the studied community.

how? Three reference projects will be studied, based on the criteria of the chosen design sites. The reference projects will be studied through behavioural mapping, and conclusions will be visualised alongside photographs.

strategic actions

why? While working around a case study, the research should remain academically relevant. Therefore strategic actions which are grounded in thorough research are formulated in a way that they can be used in other, but similar settings.

how? The conclusions gathered from spatial analysis and ethnographic research will be summarized and developed into spatial solutions.

participatory action research

why? Participatory action researched is both used as a way of informing design, as well as evaluating design. It prioritises experiential knowledge, which is needed as little research has been done regarding the spatial needs of the researched community.

how? Moments of data gathering will take place in workshop setting, allowing participants to point out their preferences or dislikes through stickers.



To truly understand the problem at hand, it is necessary to examine the theories that laid the foundation for the neighbourhood, as well as theories that challenge these foundations.

Voorhof, among many other post-war neighbourhoods, can be seen as a result of three major societal and technological advancements happening in Europe after World War II. A rising shortage of housing alongside many technological advancements that made standardization of prefabricated apartment buildings possible, were major drivers behind the Dutch post-war neighbourhoods filled with medium-height and high-rise apartment buildings (Heynen, 2010). Alongside this, the modernist theory developed by CIAM (Congrès Internationaux d'Architecture Moderne) gained serious traction and was widely adopted in residential areas across Europe (Moclús & Díez Medina, 2018).

The ideals of modernist urbanism are most famously documented in the Athens Charter developed by CIAM (1933). At the time of development, inner cities were filled with overcrowded homes and riddled with diseases. Through the lens of environmental determinism, the idea that the physical shape of the built environment is decisive for the quality of life, it was believed that a neighbourhood with large open green spaces, lower building density and more sunlight would improve the health of its residents. The document further discusses the four functions of the city, namely: dwelling, recreation, work and transportation. CIAM proposes that "a reformed type of zoning must be set up that can bring the key functions of the city into a harmonious relationship and develop connections between them. These connections can then be developed into a rational network of major highways"

fig. 3.2: aerial view of Voorhof (Van de Biezen, 2017)

(CIAM, 1933, p. 5). The functions should be separated as mixing them would be unsafe in an evolving urban environment, unadjusted to motorized vehicles.

These principles of modernist urbanism were previously defined as a major influence in the perception of nuisance by loitering youth. In order to ground this research in academic knowledge, existing theories and concepts are discussed and elaborated on. The complexity of the problem at hand is illustrated through identifying contradictions within the theories used. Many of these theories critique and contest the ideals according to which the modernist, high-rise neighbourhoods were designed. Activists, urbanists, researchers and philosophers have extensively discussed this subject, noting their lack of street life (Jacobs, 1992) and the ignorance of the lived experiences of their inhabitants (Lefebvre, 1996).

Jane Jacobs (1992) discusses the lack of street life in her book *The Great Death and Life of American Cities*, as a result of modernist planning. The functionalist zoning of the post-war, high-rise neighbourhood only stimulates movement through specific parts of the neighbourhood at specific times of the day. There is no continuous flow of people throughout the neighbourhood which results in empty streets and sidewalks. These sidewalks are, according to Jacobs, not merely needed for transportation of people, they are integral elements for safety, contact and a meeting place for children.

The disruptive elements of youth behaviour, contradictory to what one would assume, can contribute to sidewalk safety (Jacobs, 1992). Natural surveillance or mutual policing works most effectively when there is a slight threat of hostility. Small nuisances caused by *unspecialised play* thus create an environment in which pedestrians are more aware of their surroundings. This induces a contrast between the increased safety caused by the heightened awareness discussed by Jacobs and the perceived unsafety triggered by the presence of youth groups (Liedelmeijer et al., 2009). Therefore, the perceived unsafety needs to be addressed, as the presence of youth groups can be considered an unavoidable element of public space. The *unspecialised play* exhibited by youth groups are more likely to be experiences as a nuisance if certain spatial conditions are not met. Narrow and straight sidewalks leave little room for appropriation, rather broad sidewalks with irregularities in the building line create the necessary conditions for loitering.

Jacobs shortly touches upon the need for adolescents to form their own perceptions of the world through public interactions. This notion is what forms the basis for Lieberg's (1995) places of interaction. Interaction with the public allows adolescents to learn from the city, through observation and testing of behaviour, the youth gain knowledge to use in different situations. Lieberg also states that, since the youth have no obvious right to privacy, being under supervision at all time, they also withdraw to the public space in their need for privacy. These differences in youth behaviour which both take place in public space allow Lieberg to develop two categories of space: places of interaction and places of retreat.



fig. 3.3: place of interaction


fig. 3.4: place of retreat

These two different types of places serve different purposes. As has been mentioned before, places of interaction allow for the testing of different behaviours and the discovery of societal boundaries (Lieberg, 1995). Especially the latter, the testing of societal boundaries, is what is often considered a nuisance, as, for one to discover where the boundaries lie, one has to go beyond them and be called back. Socialisation with others is necessary for youth to develop self-identity, self-esteem and social competences (Owens, 2002).

Places of retreat offer opportunities for other types of youth behaviour. This is where youth behaviour can transgress into minor criminal activity. Graffiti and vandalism are more commonly found among places of retreat. While graffiti is often seen as a way of challenging authority (Ferrel, 1995), motivated by the thrill associated with minor transgressions, graffiti in public places also has a deeper, more meaningful function. Graffiti allows the youth to develop a sense of agency and express cultural identities (Campos, 2015). These places are most commonly found along the urban fringes (Lieberg, 1995), meaning areas of transition between spaces of interaction and residential, or at the boundaries of the neighbourhood.

These places might initially appear to introduce a spatial dichotomy within the neighbourhood, however, this distinction is more fluid in nature and heavily dependent on context. Some places are through their predetermined functions temporarily places of interaction, but outside of operating hours, these places can become places of retreat. Especially in the modernist neighbourhood, which is functionalist by design, the temporality of places of interaction is very visible. There is no use in being around a shopping centre after opening hours, as it is not mixed with other functions such as housing or recreation.

For the development of adolescent youth, it is important that they have access to both places of interaction and places of retreat, and are able to shift between them. They need to be able to appropriate and sometimes take over these places, as no places in the neighbourhood have been specifically designed for them. While doing so, the youth challenge the unwritten rules as a way of simplifying public space, creating a blank slate which can be used to test behaviours and establish social relations.

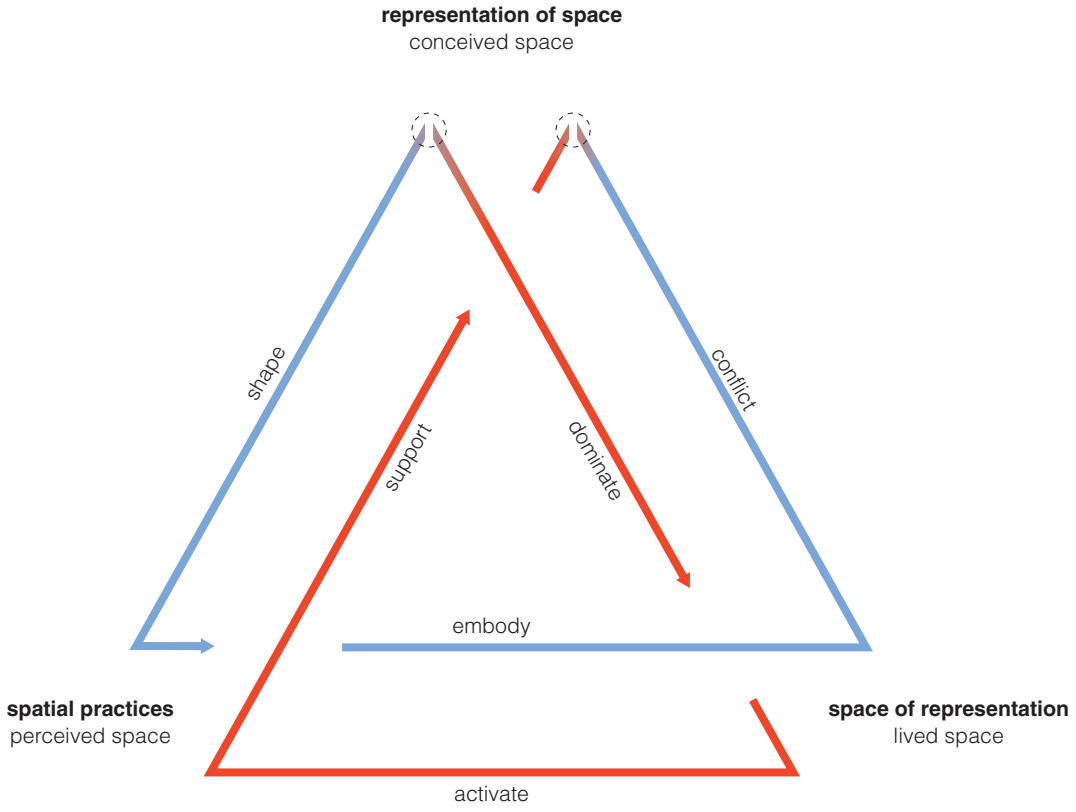


fig. 3.5: the dimensions of social space (Lefebvre, 1991; Chao, 2022)

The disregard for the lived experiences and social relations in public space is one of the main critiques on modernist urbanism discussed by Henri Lefebvre (1996). His article Right to the City discusses that neighbourhoods should be shaped and reshaped through participation and appropriation by the users. He states that "the right to the city cannot be conceived of as a simple visiting right or as a return to traditional cities. It can only be formulated as a transformed and renewed right to urban life" (Lefebvre, 1996, p. 158). The modernist neighbourhood, whose design is focused on the routines which stem from the workday of an adult, has been developed through market forces, focussing on the individual. Through this method of development, the wants and needs of many other users of the neighbourhood, among whom the youth, are largely neglected.

Using Lefebvre's (1991) framework, one can say that in the modernist neighbourhood, conceived space dominates over perceived and lived space. In other terms, the highly planned and functional identity of the neighbourhood (conceived space – representations of space) reduces the possibility of unplanned behaviour and informal use of public space (perceived space – spatial practice) and leave little room for appropriation (lived space – representational space). The lack of space for unplanned behaviour and appropriation can cause friction, especially when youth appropriate urban space which was originally designed for adults (Gray & Manning, 2022).

The ideas of Lefebvre were further elaborated on in the theory of everyday urbanism (Chase et al., 1999). The theory of everyday urbanism advocates for the repositioning of the designer. Through immersion, the designer should be forced to address the challenges of daily life. Where Lefebvre's work was largely a critique on the modernist neighbourhood, Chase et al. attempted to "focus on the other side of the equation - the possibility of reclaiming elements of the quotidian that have been hidden in the nooks and crannies of the urban environment" (p.10). They see everyday places such as streets, sidewalks and vacant lots as places of social transition with the ability to create new social arrangements. This is also what Lieberg (1995) discusses, the street is where teenagers test their behaviour to develop their own identity, and is therefore a place of social transition.

I got a fine here once just for being here because they thought I belonged to another group



fig. 3.6: the tightening of loose space

Anytime a place is used for activities that differ from the primary use, the *looseness* of public space is established. Therefore, when streets, sidewalks and vacant lots are used as places of social transition, these places become loose. The concepts of tight and loose urban space focus on the degree to which public space allows for unplanned behaviour (Franck & Stevens, 2007). Tight urban spaces are environments that are highly planned. The use is defined and deviation from the predetermined use can generate resistance. Loose space, on the other hand, is ambiguous. Loose space can be appropriated and allow for a multiplicity of uses.

The concepts of tight and loose space are not easily defined by spatial requirements. Looseness is defined by people and their actions, and maybe more importantly, the acceptance of those actions. It is dependent on social and cultural factors, but also has a temporal dimension. Certain behaviour may be acceptable during the day, but unwanted at night. Because the tightness or looseness of a place is not merely defined by the spatial environment, but also by acceptance, a place can shift between loose and tight very quickly. Youth in Voorhof used to appropriate a square, located at the intersection of the Papsouwselaan and Mercuriusweg. This square would function as a loose space; it had no defined function and no other users. However, through a ban on gatherings on the Papsouwselaan, instated by the municipality to counteract the presence of youth groups, this square became a tight space. Youth could get fined for being there, even when not bothering other residents.

However, there are spatial conditions that stimulate the emergence of loose space. Niches, stairs and recesses at the edge of public space stimulate people to linger, for instance, and movable objects assist in the process of appropriation. Franck & Stevens also identify publicly owned, leftover spaces, adjacent to spaces with a fixed function, as loose, however, Newman (1972) claims that these very places lack a feeling of territoriality and thereby are not prone to appropriation. As such, an abundance of loose space does not necessarily result in an environment which supports appropriation.

A place is not inherently loose or tight, there is a sliding scale in which Franck & Stevens make a distinction between four *phases*. The loosest of these phases is discovery, used for any place currently without a formal use, it does not have a predetermined function and therefore the opportunity for unplanned behaviour. The phase of appropriation follows, a defining feature of loose space. Appropriation happens around places with a predetermined function, and are at most mildly transgressive. When a place becomes more planned, public space can enter the phase of tension. In this phase, unplanned behaviour requires working around the existing order and control. Finally, deviation from the intended use in spaces where the intended use is fixed is seen as resistance. Resistance often has a wider context and tests the levels of tolerance of its spatial and societal environment.

Within youth behaviour, it is important that a space is not too loose. When a space is too loose, there are no clear conceptions of acceptable and unacceptable behaviour, and therefore there are no opportunities to test behaviours. However, when a space is too tight, the testing of different behaviours by youth becomes more likely to be perceived as a nuisance to other users of public space. Public space must therefore be able to



fig. 3.7: appropriation of the neighbourhood as a democratic expression


fig. 3.8: the smoothening of the neighbourhood

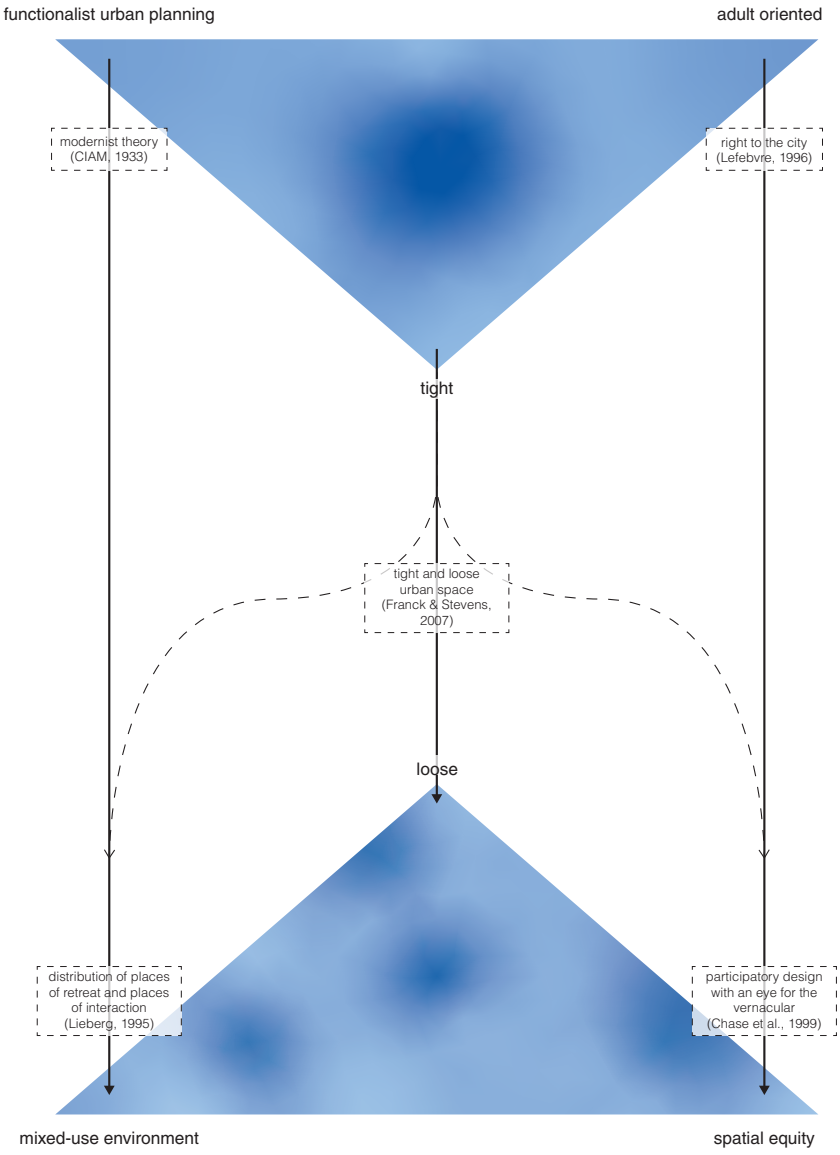
tolerate the testing of societal boundaries while not causing excessive nuisance.

Boer (2023) argues that, in pursuit of urban perfection, public space is tightening. Any undesirable behaviour or community is actively being eliminated, a process he calls *smoothening*. This smoothening removes any and all diversity to create the *Smooth City*. The Smooth City is a homogeneous place, whereas the heterogeneous identity of public space is essential for the youth to develop themselves (Visser et al., 2015). In striving for perfection, any chance for appropriation is removed. Boer argues for friction, which can be related to what Franck & Stevens call tension. Unpredictability and mild discomfort are crucial for retaining the diversity of the city.

The city is also being smoothened through public policies, as previously stated, by instating a ban on gathering, the municipality is able to remove any undesired behaviour or groups. Through this process, the complexity and diversity of the city are reduced and alternative ways of experiencing the city are erased. Therefore, "the hegemony of the smooth city is thus not only fundamentally anti-urban, but, […] also fundamentally anti-democratic" (Boer, 2023, p. 141). An example of the anti-democratic identity of the smooth city can be found in the active removal of graffiti. As mentioned before, graffiti functions as a way of challenging authority (Ferrel, 1995) and allows the youth to develop a sense of agency and express cultural identities (Campos, 2015). The removal of these opportunities is inherently anti-democratic.

Boer states that this "leaves literally no space for multiple kinds of voices, ways of life, ways of expressing, or ways of imagining alternatives to be present in the city" (2023, p. 142). The youth are being excluded from public spaces, as they do not conform to the general perceptions of order and safety. Ultimately, the exclusion of youth groups lessens the ability of the youth to develop themselves (Owens, 2002). Thus, resisting the smoothening of urban environments is necessary for the testing of societal boundaries, and, with it, adolescent development.

from a monocentric system of disturbances...



...to a polycentric model of testing societal boundaries

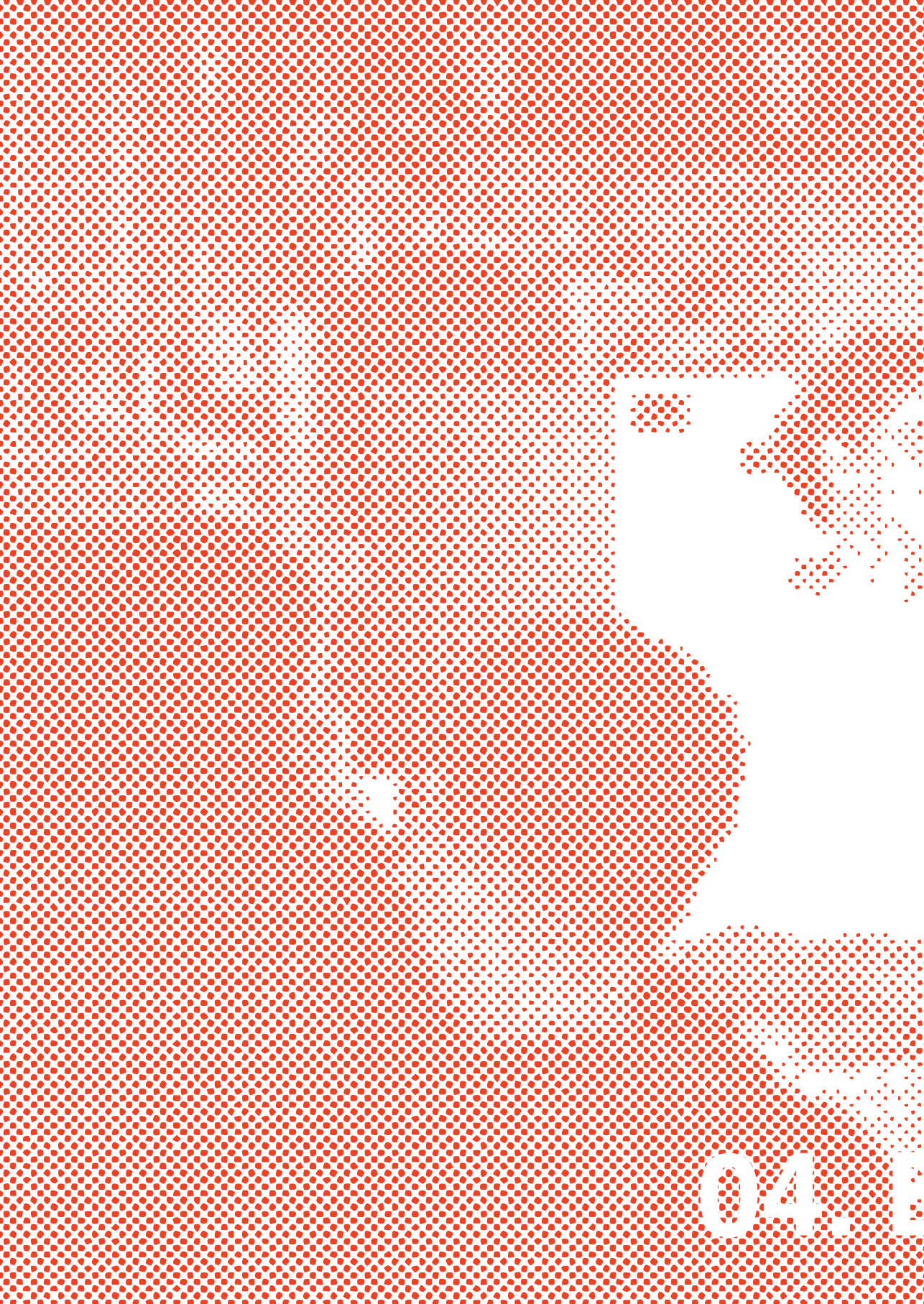
fig. 3.9: conceptual framework

CONCEPTUAL FRAMEWORK

The conceptual framework identifies the multiple facets which contribute to the root cause of the problem. Based on theories and concepts, it describes a framework through which the neighbourhood can be developed *from a monocentric system of disturbances, to a polycentric model of testing societal boundaries.* The conceptual framework first identifies the theories which provide a deeper insight into the influence that the post-war, high-rise neighbourhood has on youth behaviour. These theories are supplemented with other theories and concepts, indicating possible methods of remediation, leading to an environment in which youth behaviour has a less monocentric character and is therefore experienced as less of a nuisance.

The functionalist identity of the neighbourhood creates a disbalance in the distribution of places of interaction and places of retreat. A greater distribution of places of interaction, often the places where people experience nuisance, is one step towards the polycentric model of testing societal boundaries. Furthermore, when designing neighbourhoods, all users should be taken into account. The post-war neighbourhood is often designed to fit the spatial hegemony of adults, thereby neglecting the importance of public space for the youth, also often the predominant users. By taking their day-to-day lived experiences into account, the neighbourhood can develop into a more spatially equitable place. These two lines of connected theories and concepts are also related to the concept of tight and loose urban space. This concept concerns itself with the relationship between the acceptance of behaviour and public space, through stimulating the looseness of public spaces, youth behaviour can become a part of everyday life and less of a nuisance.

Through this, the modernist neighbourhood can become a place of development for adolescent youth, rather than a place of repression.



ETHNOGRAPHY



fig. 4.1: photograph of the author in conversation with the youth (TU Delft, 2026b)

This thesis often discusses *youth* and *youth behaviour*, and up until this point, much of this information has been gathered from a multitude of literary sources. While this body of research has provided valuable insights into what drives youth behaviour, these studies have been conducted in differing socio-political landscapes. To truly grasp the influence of the design of post-war, high-rise neighbourhoods on the behaviour of the youth, an ethnographic approach is adopted. Particularly when working towards neighbourhood-specific spatial interventions, the "process of engaging with ethnographic research can be a means of informing design policy and practice, and […] findings from ethnographic research can provide a resource that improves cultural literacy and supports social justice in professional practice" (Rishbeth et al., 2018, p. 38).

In order to conduct meaningful, ethnographic research, a relationship of trust has to be established with the youth (Tickle, 2017). To built trust with the youth, a conceptual model identifying five processes was adapted (Dawaele & Cloostermans, 2025), the processes being:

1) caution/hesitation
2) getting to know each other
3) mindful approach
4) support
5) trust

Initial responses of caution or hesitation find their roots in previous disappointments and negative encounters. In the context of this study, this was most clearly reflected in feelings of distrust, as some visitors of the youth centre initially suspected that the researcher could potentially be affiliated with the police. This initial distrust was quickly overcome through informal interaction, getting to know each other. Being from a similar age, gender and living in the same neighbourhood, helped to establish a non-hierarchical relationship, instead of a researcher-participant relationship. Within this non-hierarchical relationship, the third process, a mindful approach, becomes very relevant. Being clear about the intentions and aims of the research is necessary in this process. It allows the youth to consider what information they feel comfortable sharing, given an understanding of the research aims. The fourth process, support, is described as "establishing reliability within a context of reciprocity. This means that roles fluctuate between being the supporter and the supported" (Dawaele & Cloostermans, 2025, p. 724). Support can be demonstrated through trustworthiness, therefore, returning to the youth centre weekly and maintaining relationships demonstrates this support. Finally, to achieve trust, a safe space is essential. The Mall provides an environment, both spatial and experiential, in which the youth feel comfortable and safe, serving as an additional pilar of support throughout these processes.

Establishing a relationship of trust takes time. During this process, no direct questions are asked concerning their lived experiences of growing up in a post-war, high-rise neighbourhood. Nonetheless, through explaining the intentions and aims of the research, conversations arise, providing valuable insights into the driving forces behind youth behaviour.





fig. 4.2: photographs of the workshop results

Once a relationship of trust is established, it becomes possible to seek deeper insights. This is done by adapting principles commonly used in participatory action research. This is “an approach to research prioritising the value of experiential knowledge for tackling problems caused by unequal and harmful social systems, and for envisioning and implementing alternatives” (Cornish et al., 2023, p. 1). Within participatory action research, outcomes are generated through a reflective cycle (Baum et al., 2006). In this cycle, data is collected and analysed, determining which action should follow. This action is then researched further, after which it is reflected upon by participants. Ideally, this cycle is iterative.

Cornish et al. (2023) identify the building of relationships as a key element of participatory action research. Ethnographic research methods as previously explained therefore lay the foundation for participatory action research. It makes it possible to collect the data necessary for the identification of socio-spatial elements in the geographies of hanging out. The collection of data was done through a workshop, where participants were asked to point out places on a map where they prefer to hang out with their friends, and places where they would rather not go. The locations are photographed (figure 5.4) and common socio-spatial elements are identified in a matrix (figure 5.6). Socio-spatial elements often overlap, which is represented in the sketches of possible usage.

These elements are analysed through observations and used as guiding principles in the development of design for public space. These designs are eventually presented to the youth, where they can once again point out places they like and dislike.

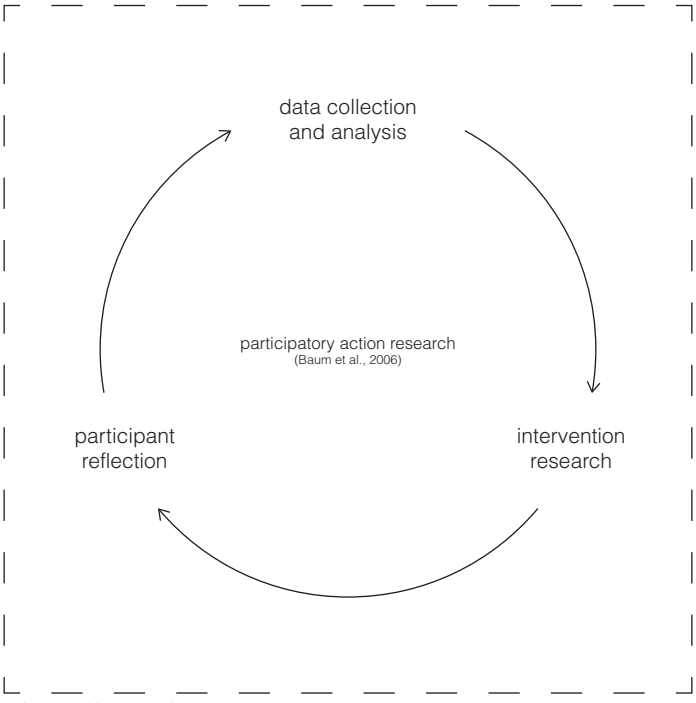


fig. 4.3: framework of participatory action research within ethnographic research



location 1



location 2



location 3



location 4



location 5



location 6



location 7

fig. 4.4: preferred locations pointed out by participants



location 8



location 9



location 10



location 11



location 12



location 13



location 14



location 15



fig. 4.5: locations pointed out by participants with corresponding photographs

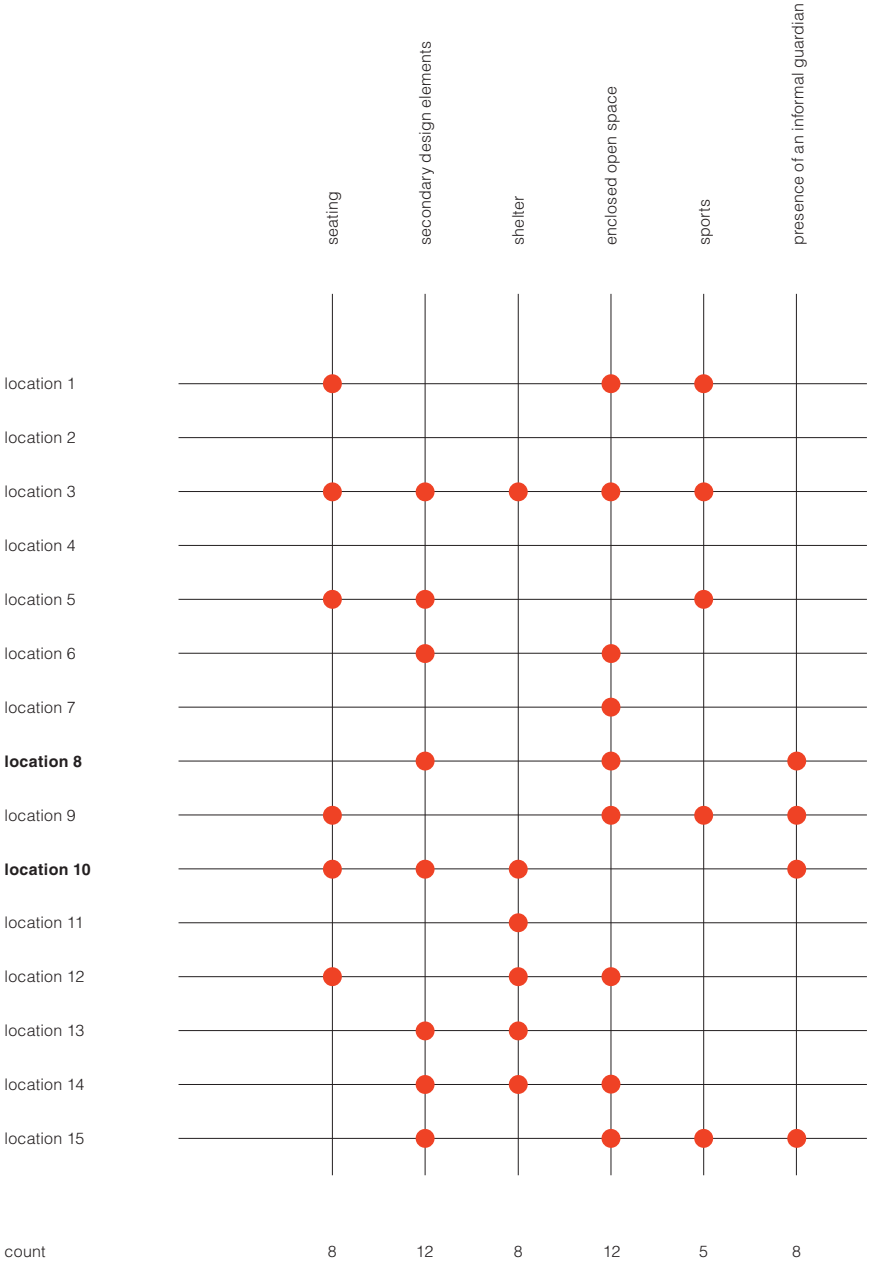


fig. 4.6: matrix of locations with spatial affordances of hanging out

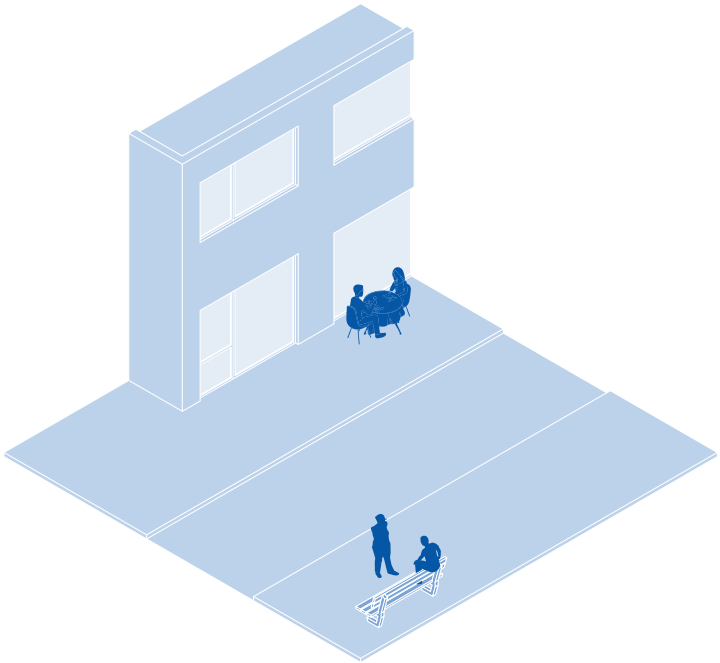


fig. 4.7: schematic view of possible usage of seating in public space

One of the recurring spatial elements, identified across six different locations, is the presence of seating facilities. However, it would be an oversimplification to conclude that youth gathering behaviour is directly determined by the availability of seating. Seating facilities, primarily benches, are common recurring spatial elements in general public space, thus a direct relationship between the availability of seating and the presence of youth cannot be established without further knowledge. To gain deeper insight into the relationship between seating arrangements and youth behaviour, multiple rounds of observations were conducted.

During observations, the most notable use of seating facilities became apparent at location 10. At nearly every observation, youth groups could be found around *Bakkerij Enes*. A distinction should be made between the different activities occuring here; the behaviour of the youth in this area could consist of loitering, as is often assumed, or, at other times, behaviour could consist of eating. This distinction is relevant, as these activities are supported by different spatial elements. When eating, the youth would make use of the available seating facilities, however, when this was not the case, most often, the youth would stand around or lean against surrounding objects.

Benches found at other locations were rarely used. Youth would gather around a bench but mostly stand rather than sit. When benches were used, they were often not used as intended; instead, youth would sit on the backrest. From these observations, it can be concluded that seating facilities should not be considered a primary spatial element in the geographies of hanging out. Rather, they function as supportive elements for other activities.



fig. 4.8: sketch of possible usage of secondary design elements in public space



fig. 4.9: schematic view of possible usage of secondary design elements in public space

While the youth might not always use seating facilities to rest, this does not mean that they do not use other forms of seating. At many of the locations pointed out by the youth during the workshop, secondary design elements, such as ledges, stairs or functional elements like bicycle parking, serve this purpose. Similar to seating facilities, secondary design elements can be found anywhere in public space; therefore, it can be reasonably expected that this category is among the most frequently recurring spatial elements in the locations identified during the workshop. Again, observations can provide greater insight into youth behaviour concerning secondary design elements.

The importance of sittable design features for successful social spaces has long been known (Whyte, 1988). A greater amount of sittable design features increases behavioural choice. The availability of choice allows adolescents to freely express themselves, therefore, secondary design elements in public space are integral for adolescents (Duzenli et al., 2010). Functional secondary design elements, such as U-shaped bicycle racks, provide the youth with the possibility of choice, while also being able to challenge the spatial hegemony of adults by appropriating public space in ways that differ from its intended use.

Observations confirm the attractiveness of these secondary design elements to the youth. At many of the locations identified during the workshop, youth tend to gather around such elements. These spatial features do not necessarily have to be sittable, as they are equally used for standing, leaning or general gathering around.



fig. 4.10: sketch of possible usage of secondary design elements in public space

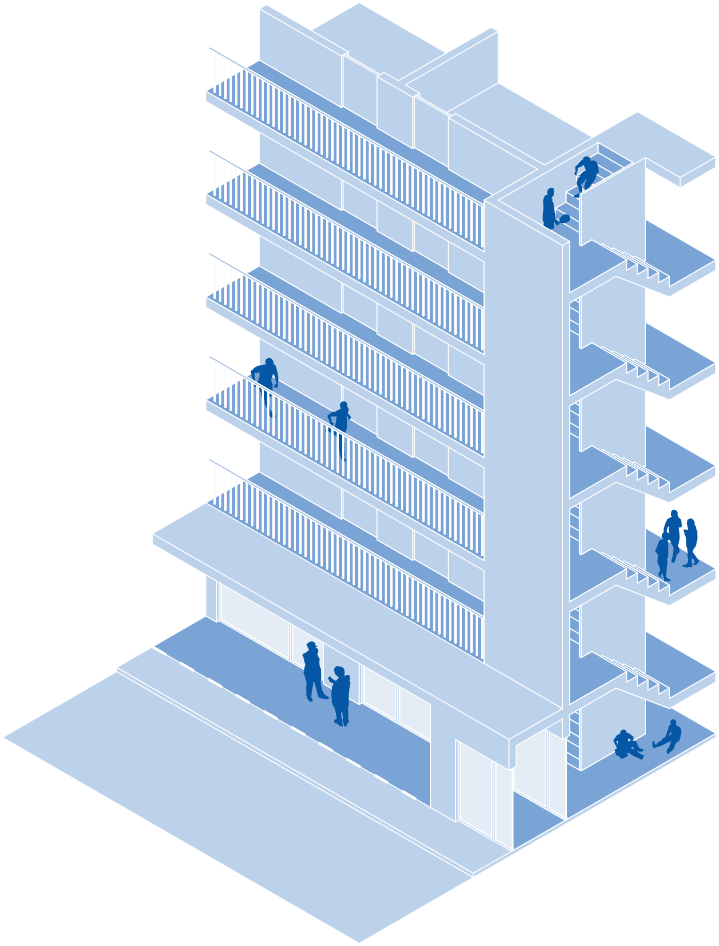


fig. 4.11: schematic view of possible usage of shelter in public space

Retreating to public space in search of privacy, personal development through interaction and the testing of societal boundaries are among the main underlying drivers for the use of public space among the youth. These needs are not seasonal, but persist throughout the year. Therefore, public space, or the youth's perception of what constitutes public space, continues to be used during poor weather conditions. It is therefore unsurprising that many of locations pointed out during the workshop offer some form of shelter.

These locations differ both in the type of shelter they provide and their degree of public accessibility, ranging from canopies to private stairwells. This variation could possibly be explained by their different affordances and functions. Some locations primarily function as a place of retreat, while others may be considered a place of interaction. Stairwells and entrances of apartment buildings have the opportunity to function as both, depending on where the youth position themselves. Hanging out near the entrance is more likely to stimulate interaction, whereas the upper floors are more commonly associated with retreat and, at times, transgression into minor illegal activities, such as drug use.

The versatility of some of these forms of shelter, allows them to be used as a meeting place throughout the year. Canopies provide protection during periods of poor weather, while retaining flexibility of movement when the condition improve. During observations, these locations proved popular among the youth, as they could often be found here.

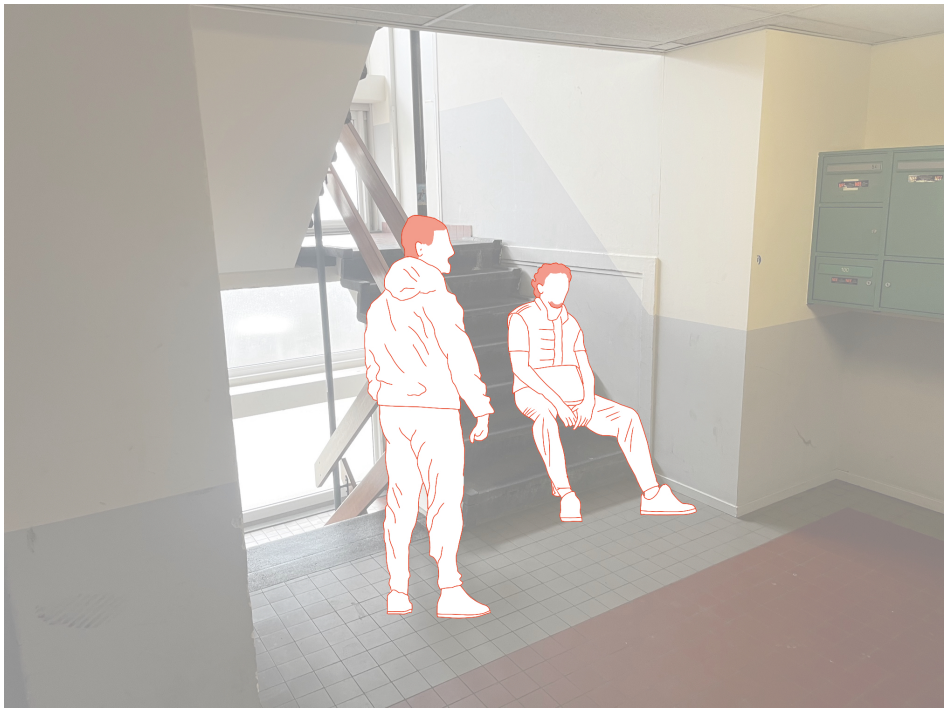


fig. 4.12: sketch of possible usage of shelter in public space

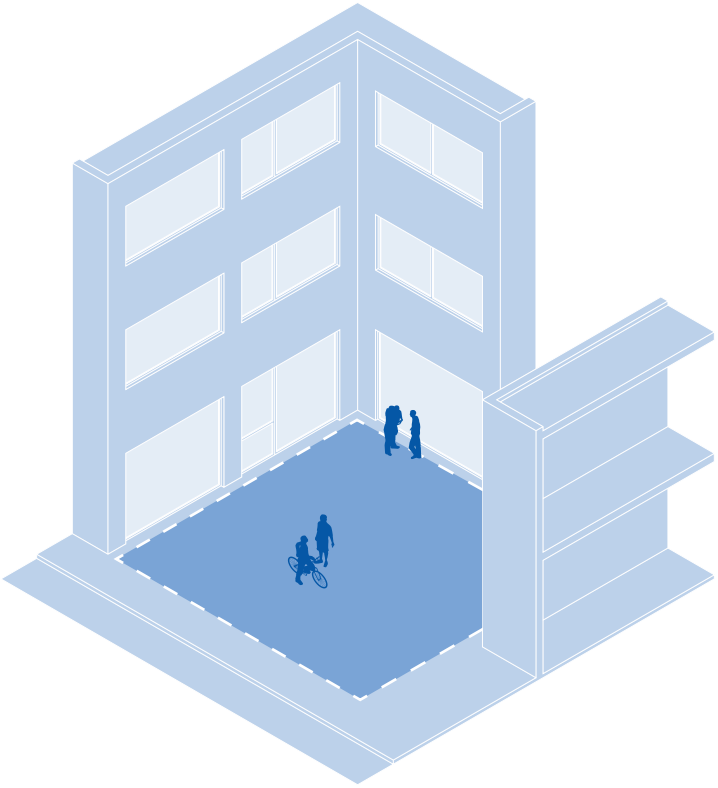


fig. 4.13: schematic view of possible usage of open space in public space

The concept of an enclosed open space may initially appear to be contradictory, therefore the concept requires further definition. Enclosed open space refers to a spatial condition characterised by open areas with relatively ambiguous boundaries, which are confined by at least two enclosing elements. These spaces should not be too small, as this may generate tension with other users, but also not too large, as the sense of enclosure would otherwise dissipate. Enclosing elements will most often consist of building facades, but can also include vegetative barriers or other physical enclosing elements.

In a neighbourhood with many large open spaces, distinctive of post-war, high-rise neighbourhoods, it is notable that the youth choose to be around enclosed open space. While some of these places have a predetermined function, such as a football field, and the use of these places by youth could be associated with its function, rather than its spatial conditions, other places have little to no function or designed elements.

As not all enclosed open spaces have a predetermined function, they are further examined in order to develop an understanding of how these spaces are used by youth. A recurring theme during observations was the initial appropriation of a central point within an enclosed open space. This typically occurred around a fixed element, but can also be facilitated with external elements, such as bikes, as has also been noted in previous research (Van Lieshout & Aarts, 2008). Subsequent youth groups, arriving after the centre had been appropriated, would then locate themselves near one of the enclosing spatial elements.



fig. 4.14: sketch of possible usage of open space in public space



fig. 4.15: schematic view of possible usage of sports facilities in public space

When adolescents are asked about their favourite places in public space, they often note their preference for sports facilities (Korpela, 1992; Abbot-Chapman & Robertson, 2001). This has also been the case in this neighbourhood, when the youth where asked about their wishes concerning the neighbourhood in a parallel study, a recurring answer concerned the addition of football fields, despite the fact that multiple football fields are already present in the area. Similar findings were identified by Van Lieshout & Aarts (2008), where participants frequently mentioned existing functions when asked about their wishes for public space.

This thesis therefore adopted a different methodology, based on the assumption that asking the youth directly about their wishes for public space would not lead to new insights. By asking the youth about their whereabouts rather than their wishes, it is possible to develop a more nuanced understanding of their spatial preferences. While a number of the locations which were pointed out during the workshop contain sports facilities, it is only a fraction of all locations pointed out.

While these findings confirm the important social function of sports facilities, they also show that the needs and preferences of youth go beyond football fields alone. Consequently, the design of public space should take into account all socio-spatial needs of adults, including needs that may not be explicitly stated by the youth themselves.



fig. 4.16: skecth of possible usage of sports facilities in public space

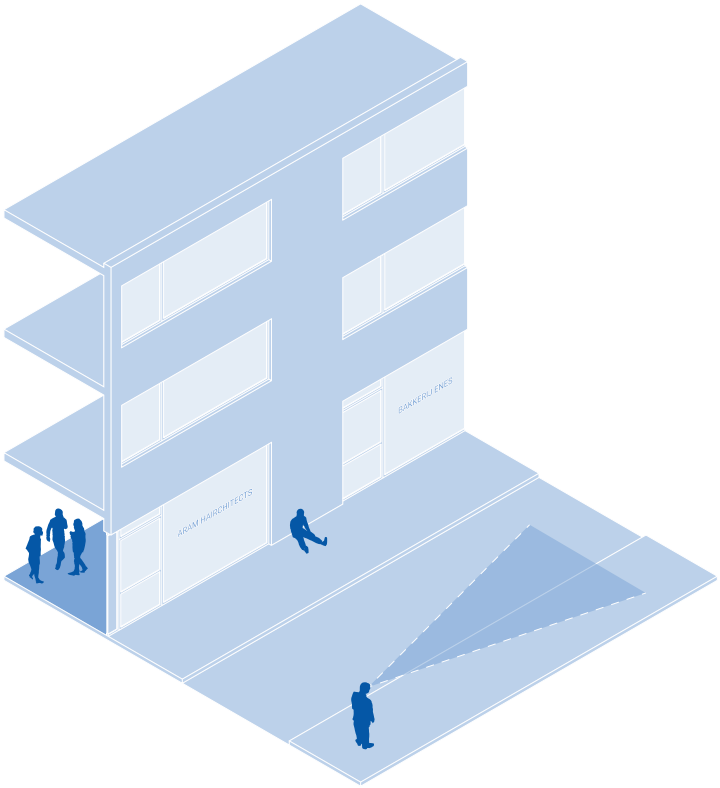


fig. 4.17: schematic view of presence of an informal guardian in public space

Youth often use public space in search of privacy, as they are otherwise under constant supervision. It can therefore seem contradictory that locations identified by participants provide forms of supervision through the presence of so-called informal guardians, such as youth workers, *straatcoaches* or other role models.

From a spatial perspective, a distinction can be made between fixed and versatile informal guardians. Fixed informal guardians are represented by youth workers at the accompanying youth centres. However, less planned community figures can also fulfil this role, including shop owners who allow youth to gather around their premises. Their importance became particularly evident during conversations with the youth, as these role models do not only provide the youth with a safe space, but can also influence their ambitions and create opportunities, for instance through internships. Versatile informal guardians are represented by *straatcoaches*. Due to their relatively informal and approachable position, they are often perceived more as peers than authority figures. By moving throughout the neighbourhood, *straatcoaches* establish relationships of trust with the youth, allowing them to discuss their behaviour and provide support when needed (Loef et al., 2012).

The presence of an informal guardian is not only important to the youth, but can also have positive effects on the experience of other users of public space. Cohen & Felson (1979) identify the absence of a capable guardian as a facilitator of illegal activities. The presence of these informal guardians can therefore preserve the youth's need for privacy while simultaneously contributing to greater perceived safety among other users of public space.



fig. 4.18: skecth of presence of an informal guardian in public space

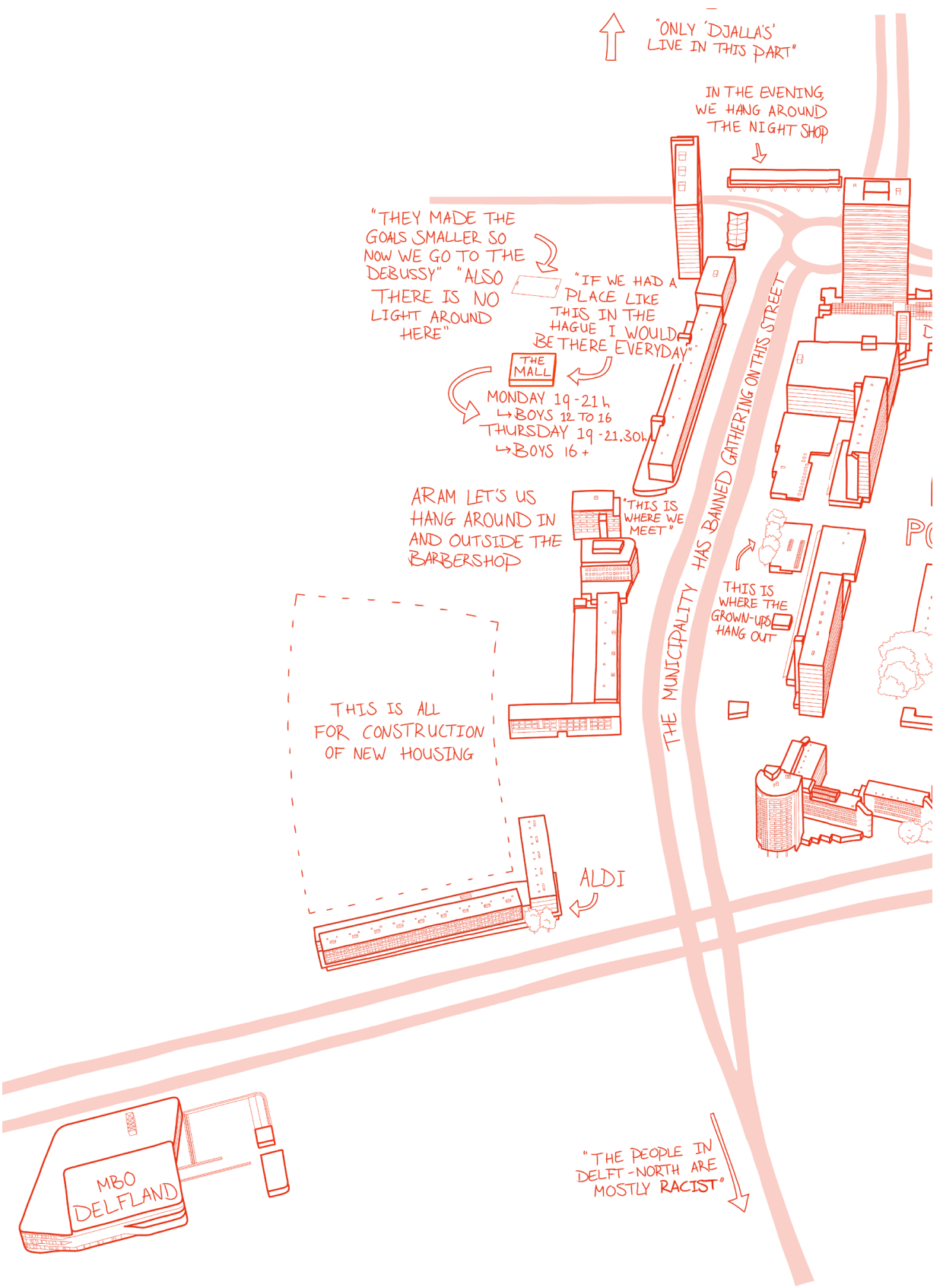
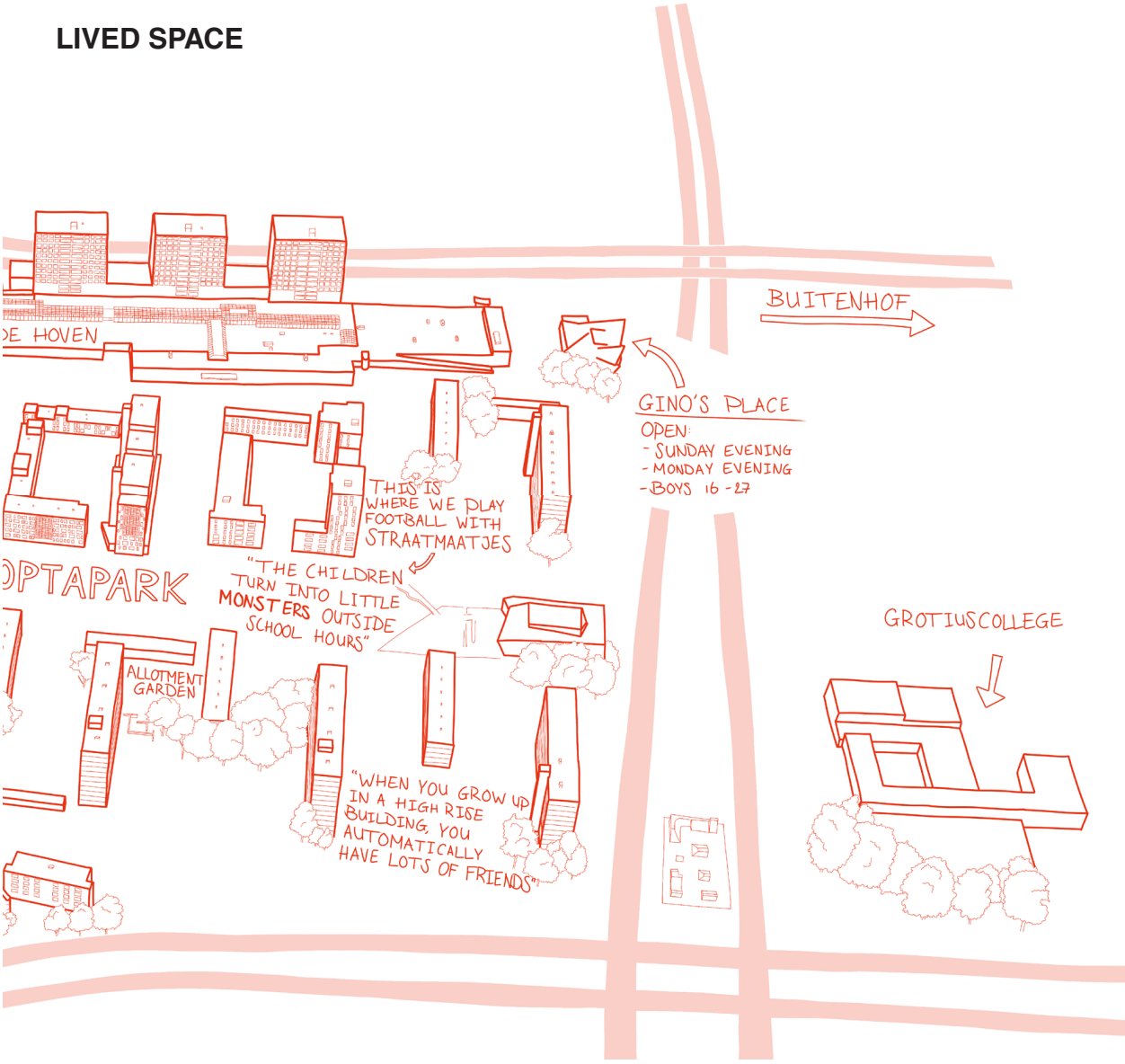


fig. 4.19: soft map of the lived experience of youth in Voorhof, based on informal conversations

LIVED SPACE



During recurring visits to the youth centre, many conversations with the youth have taken place. Not all of the information gathered during these visits could be categorised within the six themes identified previously. To provide a complete representation of the lived experience, information gathered from conversations with youth, youth workers and personal experiences were visualised through a soft map. Information gathered from conversations with the youth is specified by quotations marks.

The soft map is used as a method to gather facts, experiences and emotions related to the spatial environment that often remain invisible within conventional mapping practices. Rather than relying on the rigorous analysis of informal conversations, it is able to communicate the experience of growing up in a post-war, high-rise neighbourhood through a non-academic lens.

05. GEOGRAPH


ICAL ANALYSIS

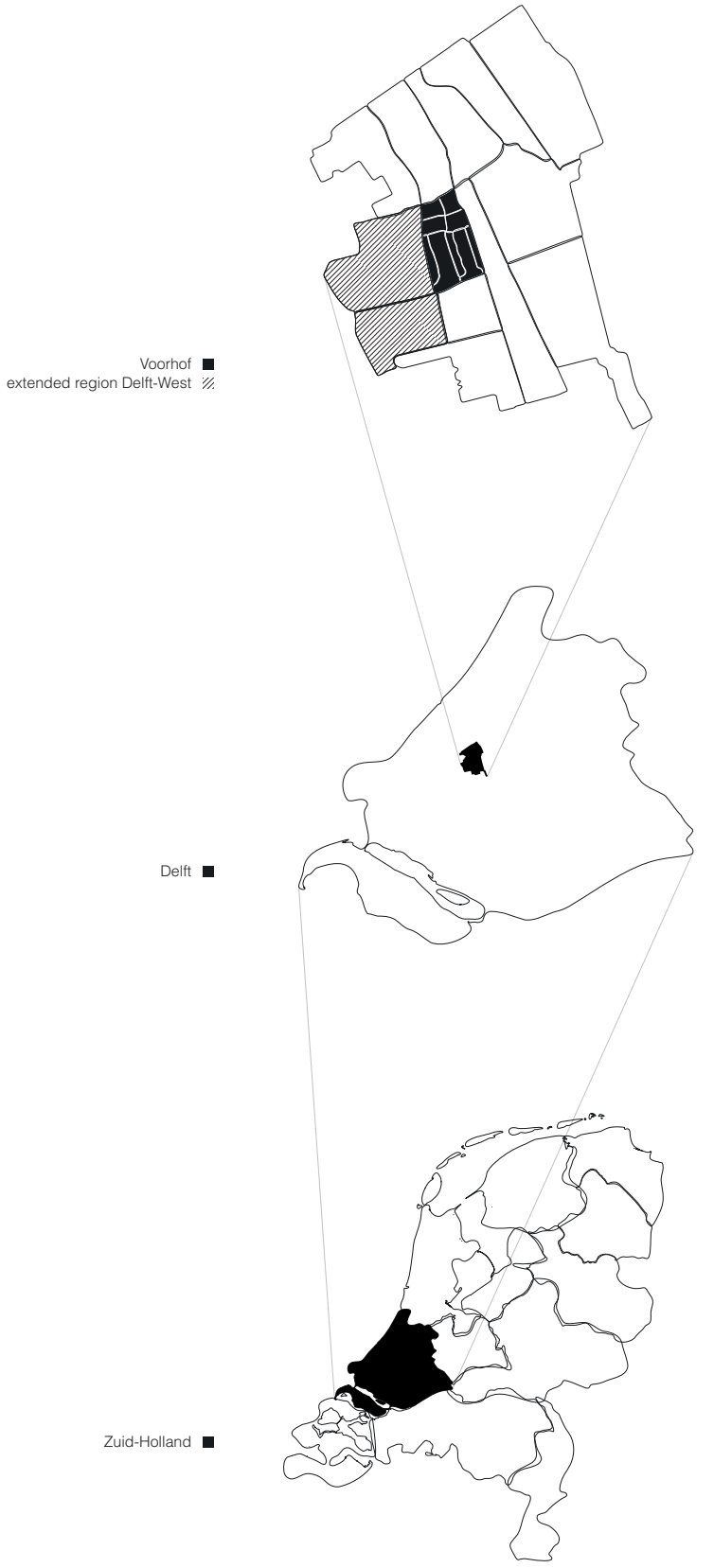


fig. 5.1: project location

GEOGRAPHICAL BACKGROUND

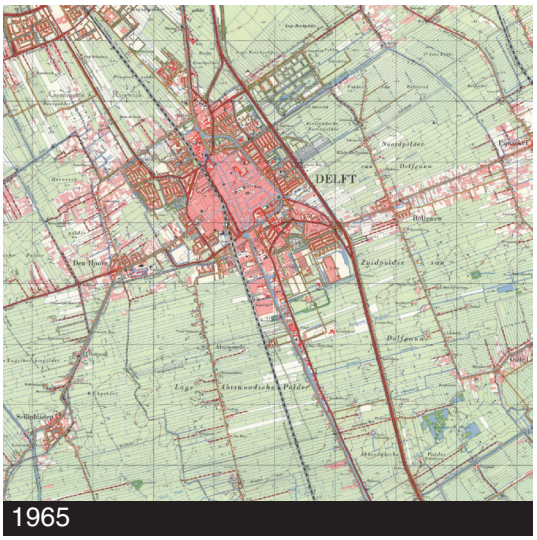
In 2022, the Dutch Ministry of the Interior and Kingdom Relations launched the programme '*Nationaal Programma Leefbaarheid en Veiligheid*' (National Programme Liveability and Safety). This programme aims to improve disadvantaged neighbourhoods in terms of quality of life (Ministry of the Interior and Kingdom Relations, 2022). For this programme, twenty regions were appointed as so-called NPLV-regions, among which Delft-West. Central to the NPLV is the role of youth, enhancing their opportunities to develop their talents, but also preventing the youth from being lured into criminal behaviour. The programme states that "a physical approach is needed in order to support social interventions and to contribute to improved safety, and vice versa" (p. 14).

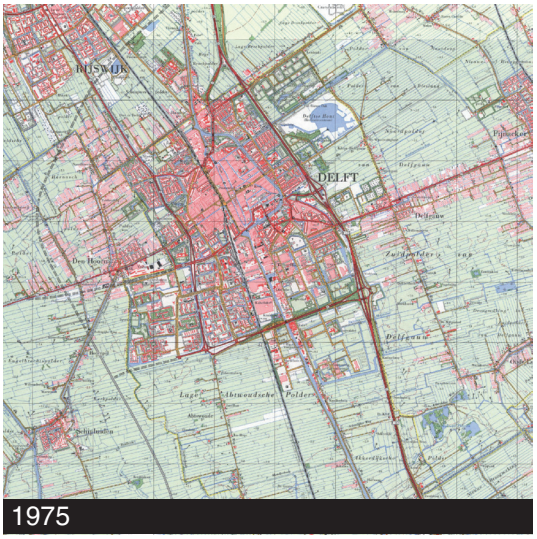
Region Delft-West includes the neighbourhoods of Voorhof, Buitenhof and Tanthof-West. As can be seen in figure 2.10, the greatest number of reports of nuisance by youth can be attributed to Voorhof. Therefore, this project will use Voorhof as a case-study to analyse youth behaviour and design renewed public spaces, tailored to the needs of the youth.

Delft is located between the larger cities of Rotterdam and The Hague. During informal conversations with older local youth, these cities often come up. When the youth gets older, they become more independent and more often go beyond the boundaries of their own neighbourhood. This transition mostly begins after high school, as this is also when daily routines and social networks begin to expand outside of the neighbourhood. This changes their activity space, as the larger cities of Rotterdam and The Hague have more to offer, and become more central to the newly established social network.

As this research takes place in a residential neighbourhood, albeit with many commercial functions, this research will mostly focus upon youth groups consisting of the ages of 12 to 17.







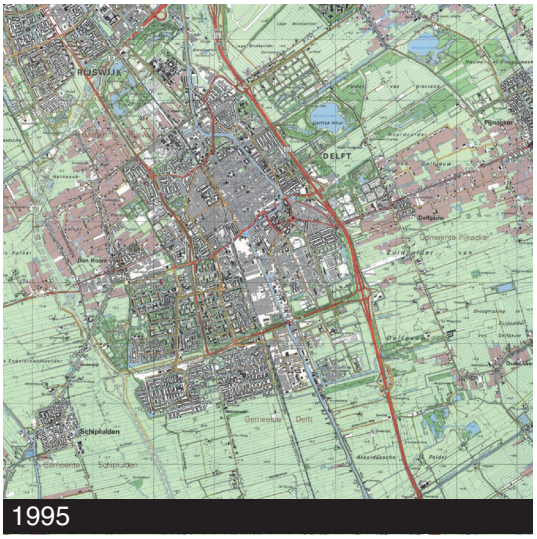






fig. 5.2: historical development of Delft (Kadaster, n.d.)

When discussing post-war, high-rise neighbourhoods, one has to address the socio-economic segregation which can often occur in high-rise housing estates in Western Europe (Tammaru et al., 2016). In order to understand how these post-war, high-rise neighbourhoods in the Netherlands came to be socio-economically segregated, it is necessary to consider the social and political landscape at the time of construction, which forms the foundation of these neighbourhoods.

After the Second World War, the housing shortage had been one of the focal points of the Dutch political agenda. Large parts of the housing stock were damaged during the war, and the post-war baby-boom exacerbated the housing shortage (Wassenberg & Van Kempen, 2004). The government established the main institutions of the welfare state, and the social-housing stock increased. The expansion consisted mostly of low-rise blocks up until the 1960s, when it became evident that the current level of housing production proved insufficient to solve the ongoing housing crisis. The Ministry of Housing supplied additional governmental support to mass construction. Alongside the technological advancements of this time, this led to a steep increase in the production of high-rise housing. The neighbourhoods of Voorhof and Buitenhof were largely constructed during this period.

The high-rise flats were more luxurious and more expensive than the low-rise, post-war neighbourhoods of the 1950s and therefore aimed at middle-class inhabitants of the city. However, the suburban, single-family homes constructed in the 1970s were better suited to the needs of the middle-class, and many residents of the post-war, high-rise neighbourhoods moved out. It was at this time, in 1974, that the government introduced rent subsidies, allowing low-income households to move into the high-rise neighbourhoods, which were abandoned by the middle-class.

Socio-economic segregation is deeply intertwined with ethnic segregation (Musterd & Van Kempen, 2009). In the Netherlands, people with a non-Western migration background are disproportionally represented in low-income groups, as a consequence, these groups are also overrepresented in social housing. In the Netherlands, families with a non-Western migration background specifically concentrate in post-war neighbourhoods, a consequence of the large share of social housing.

The deep interrelatedness of socio-economic and ethnic segregation has a great effect on the perception of youth in post-war, high-rise neighbourhoods. The general public often perceives a relationship between the behaviour of youth with a non-Western migration background and cultural differences (Blokland et al., 2010). However, an interplay between cultural differences and youth behaviour has never been empirically proven.

As no proven relationship exists between the cultural background of people with a non-Western migration background and youth behaviour, this research aims to identify the socio-spatial aspects which influence youth behaviour. The following analysis will use a layered approach to analyse key socio-spatial indicators of the neighbourhood which influence the presence of youth in public space.

amount of 0 - 15 year olds

An important variable indicative of the presence of youth in public space is the general presence of youth in the neighbourhood. Lieberg (1995) identified three categories of teenagers: peer group oriented, association oriented and home oriented. The youth groups studied in this research can be categorized into peer group oriented teenagers. According to Lieberg, these teenagers are “strongly bound to their neighbourhood and have a direct and close relationship to its public spaces” (p.724).

CBS (2025b) supplies data concerning the amount of 0 to 15-year-old inhabitants per grid of 100 by 100 meters. While 0 to 15 might not always accurately cover the youth groups studied, it does accurately depict where the

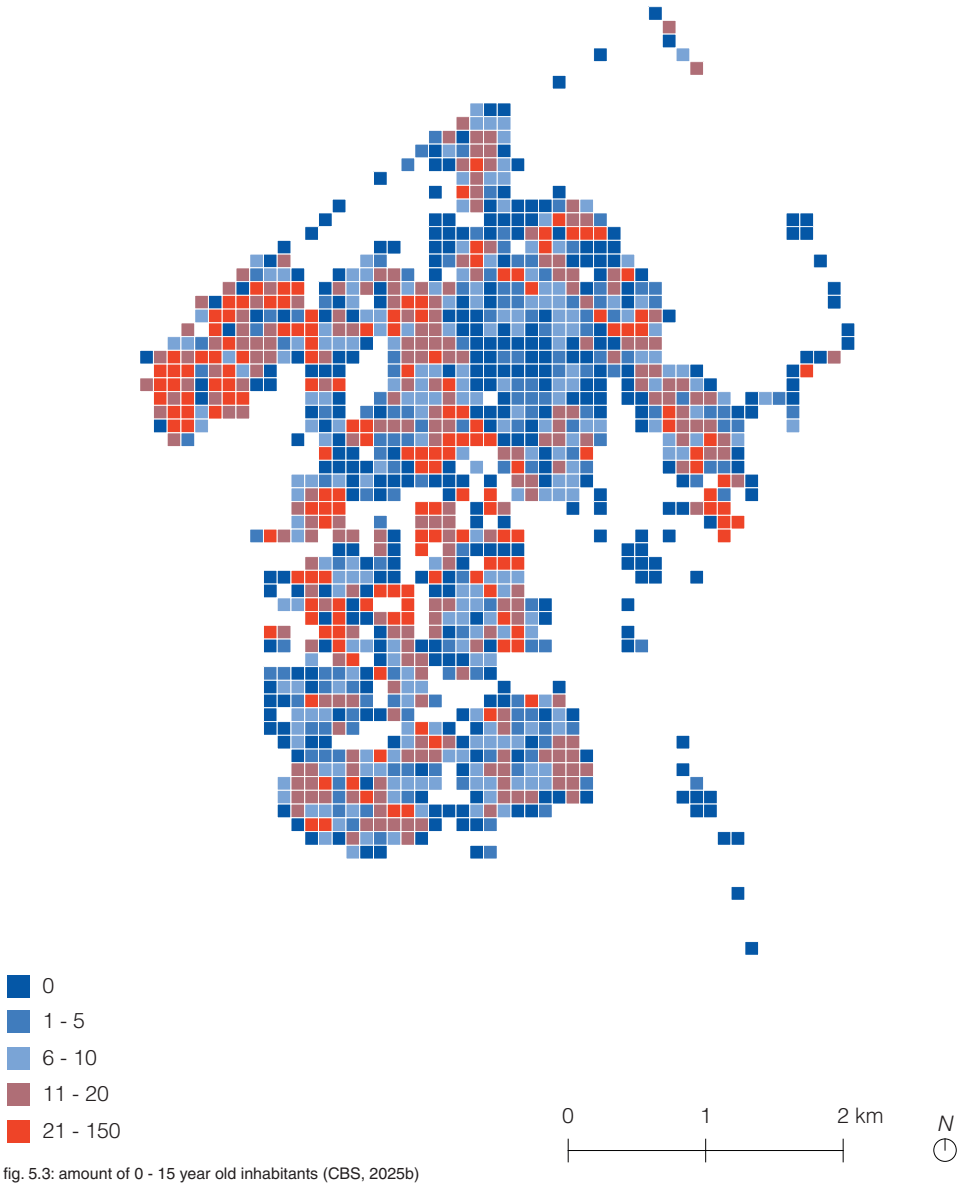


fig. 5.3: amount of 0 - 15 year old inhabitants (CBS, 2025b)

youth grow up. Data on the amount of 15 to 25-year-old inhabitants will include students and not provide an accurate representation.

The data should also be normalised in order to accurately construct an index. Cells with greater importance, in this case, a higher number of 0 to 15-year-olds, will weigh more heavily in the eventual layered index.

$$\left(\frac{\log_{10}(\text{“aantal\_inwoners\_0\_tot\_15\_jaar”})}{\log_{10}(\text{“aantal\_inwoners\_0\_tot\_15\_jaar”} + 1)}\right)^{1,4}$$

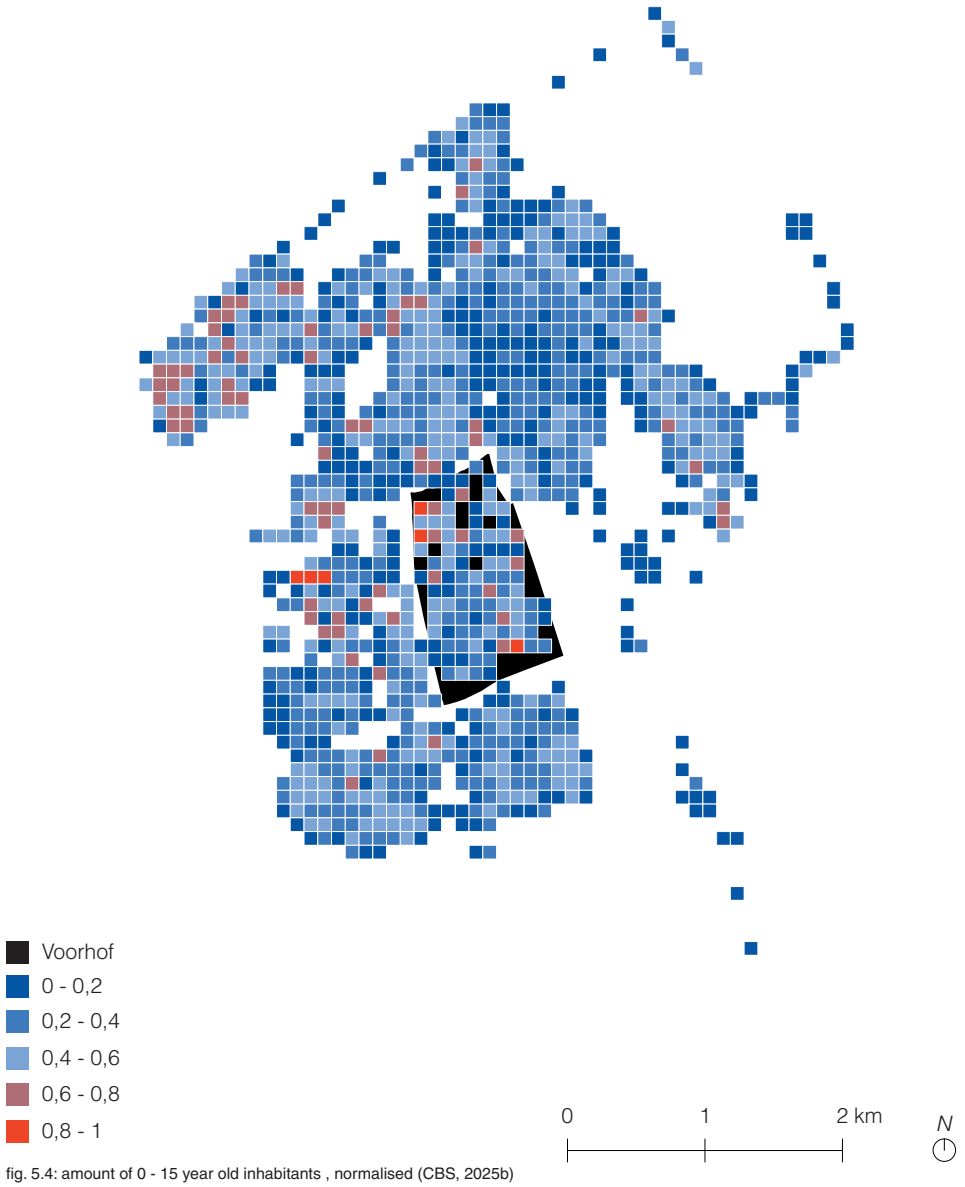


fig. 5.4: amount of 0 - 15 year old inhabitants , normalised (CBS, 2025b)

amount of m² living space per person

As mentioned before, youth are under constant supervision. In an attempt to find privacy, the youth retreat to the public space. When there is less living space per person in the home environment, it becomes increasingly difficult to find privacy in and around the home. This can be caused by a smaller dwelling, Voorhof having the lowest average square meters per house (Gemeente Delft, 2025), or a larger household, as is common in households with a non-Western migration background (Musterd & Van Kempen, 2009).

Combining data concerning dwelling size (Kadaster, 2026) and household size (CBS, 2025b), it is possible to construct a map visualising the average amount of living space in square meters per person, per building. To

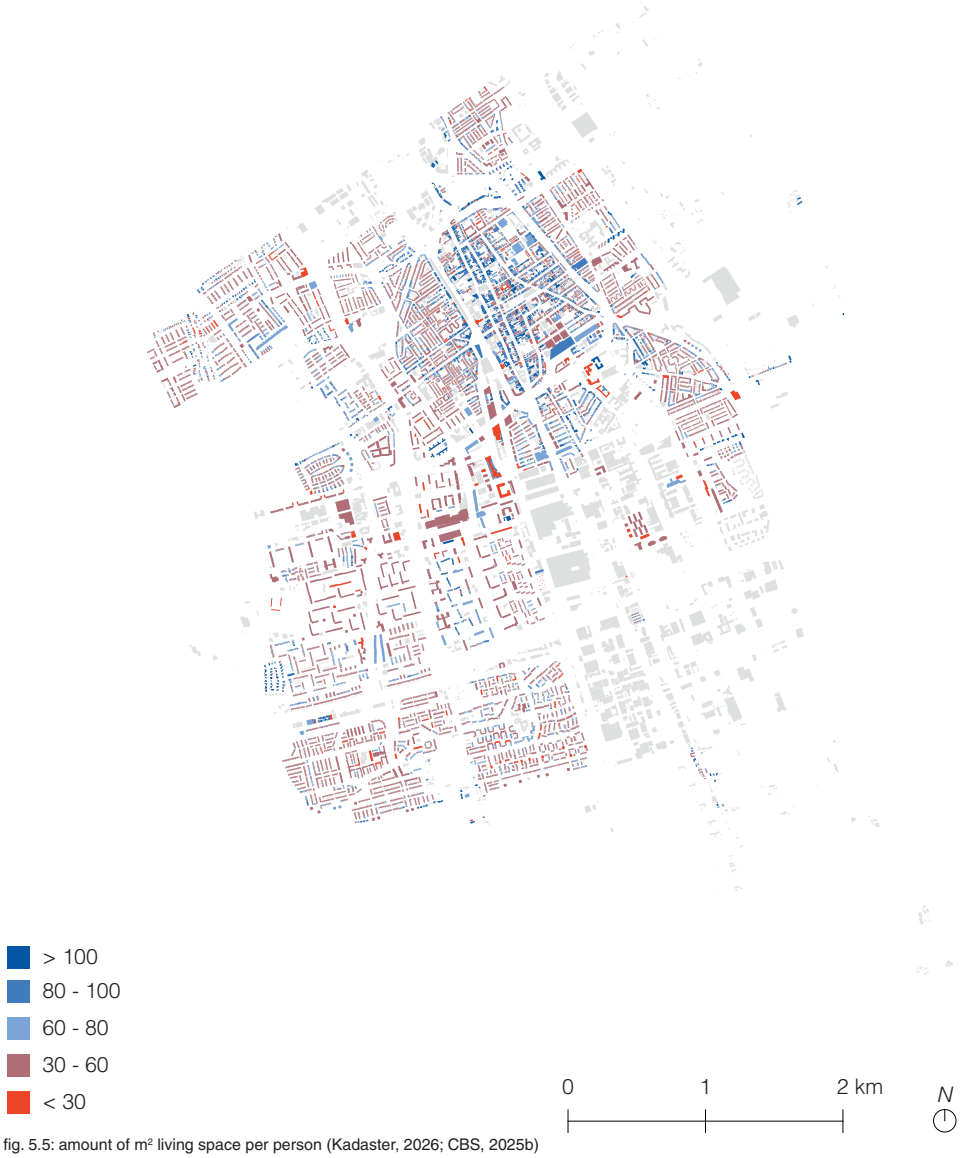
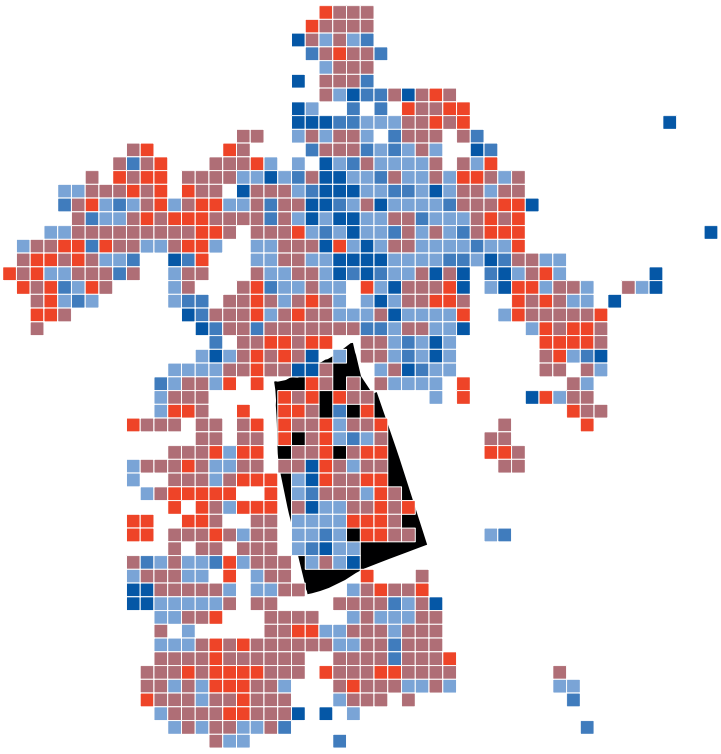


fig. 5.5: amount of m² living space per person (Kadaster, 2026; CBS, 2025b)

exclude outliers from distorting the data, any grid cell with an average of 100 m^2 per person or above has been assigned a value of 0, indicating little likelihood of youth seeking privacy in public space. Grid cells with an average of 30 m^2 per person or lower have all been assigned a value of 1, indicating a high likelihood of youth seeking privacy in public spaces.

```
CASE
        WHEN “m2pp” > 100 THEN 0
        WHEN “m2pp” < 30 THEN 1
        ELSE 1 - ((“m2pp” - 30)/70)^0,85
END
```



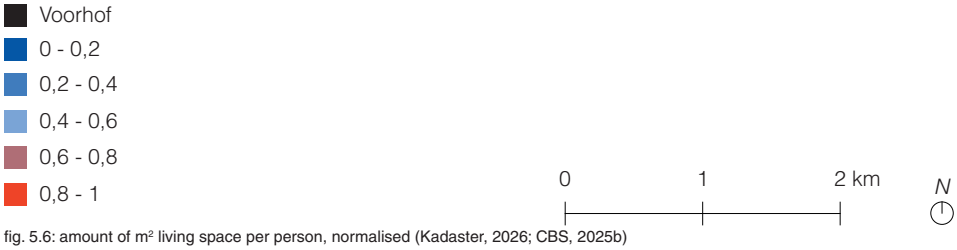


fig. 5.6: amount of m^2 living space per person, normalised (Kadaster, 2026; CBS, 2025b)

angular integration

Besides their search for privacy, the youth also use public space to put themselves on display and test their behaviour, exploring where societal boundaries lie (Lieberg, 1995). To do so, they require an audience, which is most commonly found in the general public, being anyone and everyone available on the street. Therefore, youth can often be found in and around the parts of the city where the sidewalk is the busiest.

By performing a space syntax analysis, it becomes possible to predict and analyse human movement. In this study, an angular choice analysis is conducted to identify the main pedestrian routes (Van Nes & Yamu, 2021). Using a radius of 500 meters, the analysis highlights primary routes through

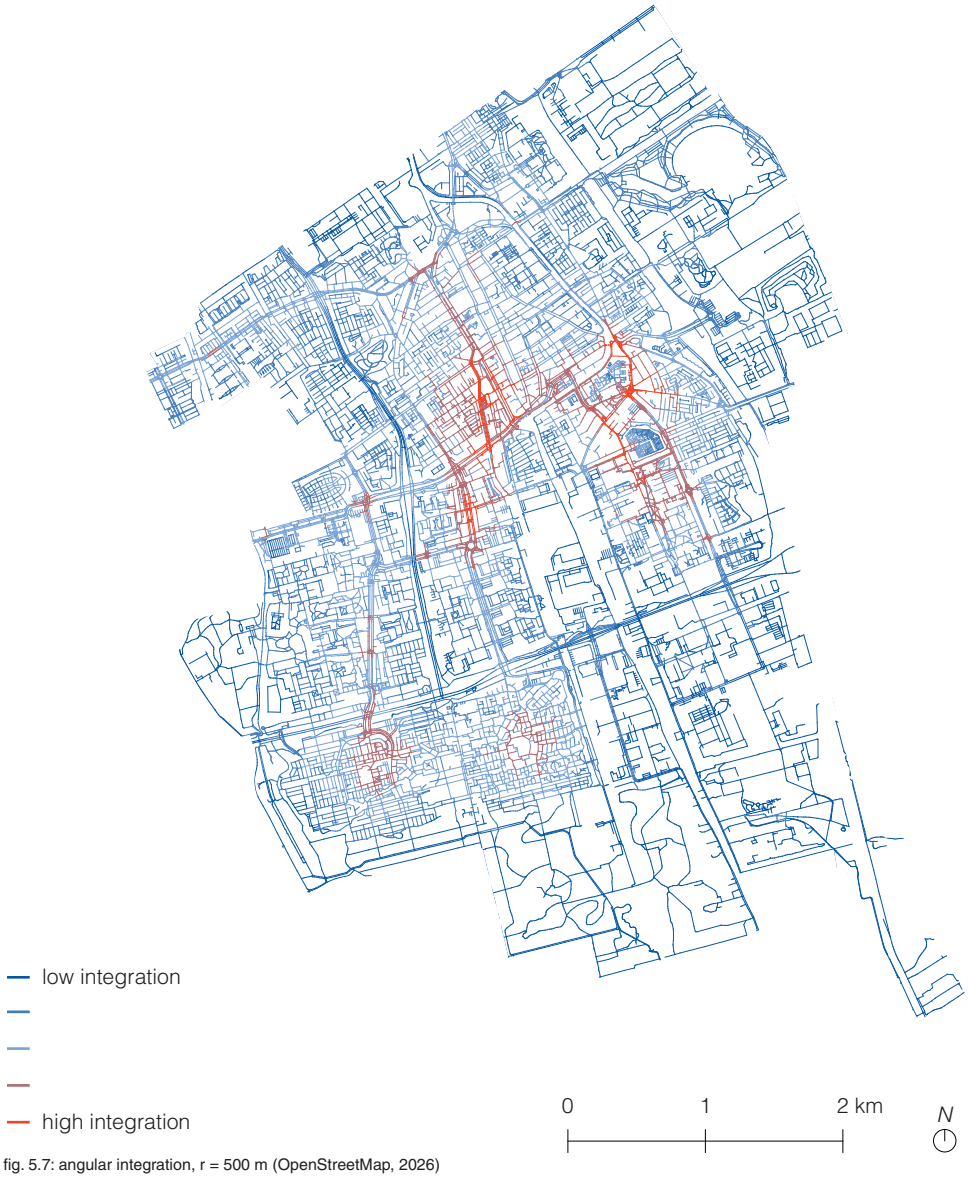


fig. 5.7: angular integration, r = 500 m (OpenStreetMap, 2026)

and between neighbourhoods, indicative of the most frequently used pedestrian network. Interaction between youth and other inhabitants, and thus the testing of societal boundaries, is most likely at these locations, as they attract the greatest number of pedestrians.

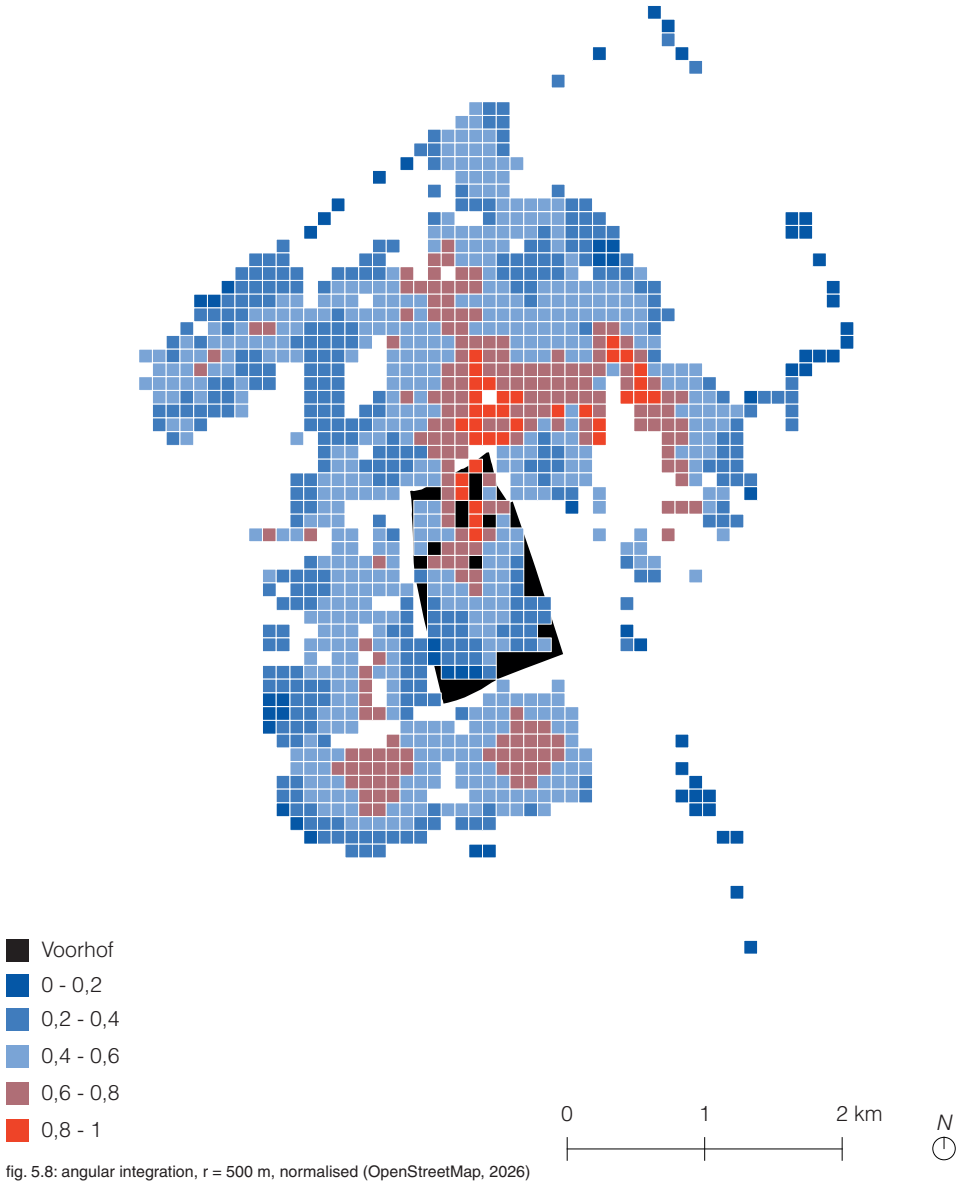


fig. 5.8: angular integration, r = 500 m, normalised (OpenStreetMap, 2026)

mixed use index

The presence of others, and thus opportunities for interaction, is not merely a result of pedestrian traffic. As Jacobs (1992) continuously reiterates throughout her book, the largest driver of the presence of people is a mixed use environment. A greater variety of functions can make urban space looser (Franck & Stevens, 2007), allowing for more appropriation or unwanted behaviour by youth.

Commercial centres are of great importance in the geographies of hanging out (Anthony, 1985; Matthews et al., 2000; Pyyry & Tani, 2016), as they provide the presence of others, shelter when needed and are often centrally located. Commercial centres provide enough space for gathering in larger groups

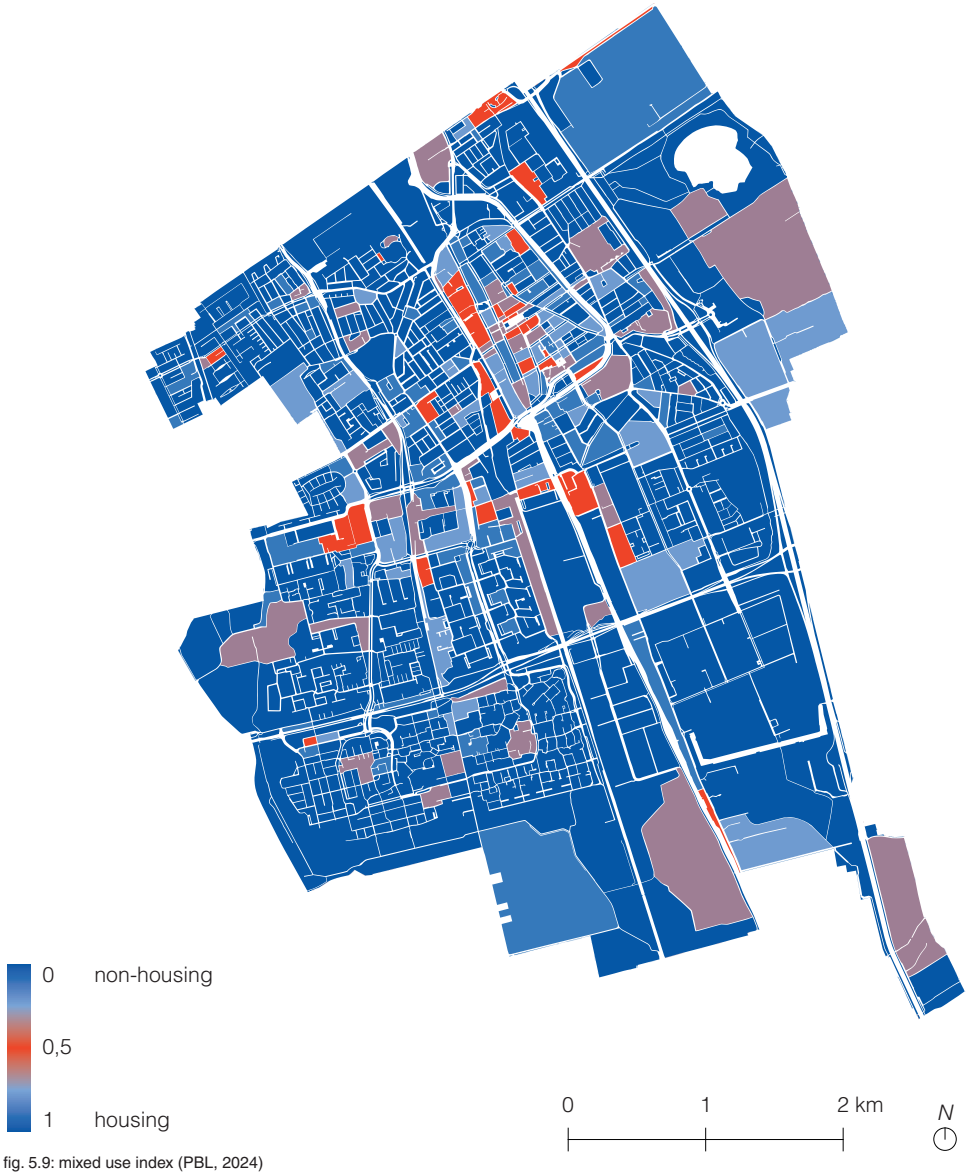


fig. 5.9: mixed use index (PBL, 2024)

(Tani, 2015), which is especially important in neighbourhoods where living space per person is low.

```
CASE
        WHEN “MXI” > 0,5 THEN (1 - “MXI”)/0,5
        WHEN “MXI” ≤ 0,5 THEN (1 - “MXI”)/0,5
        ELSE NULL
END
```

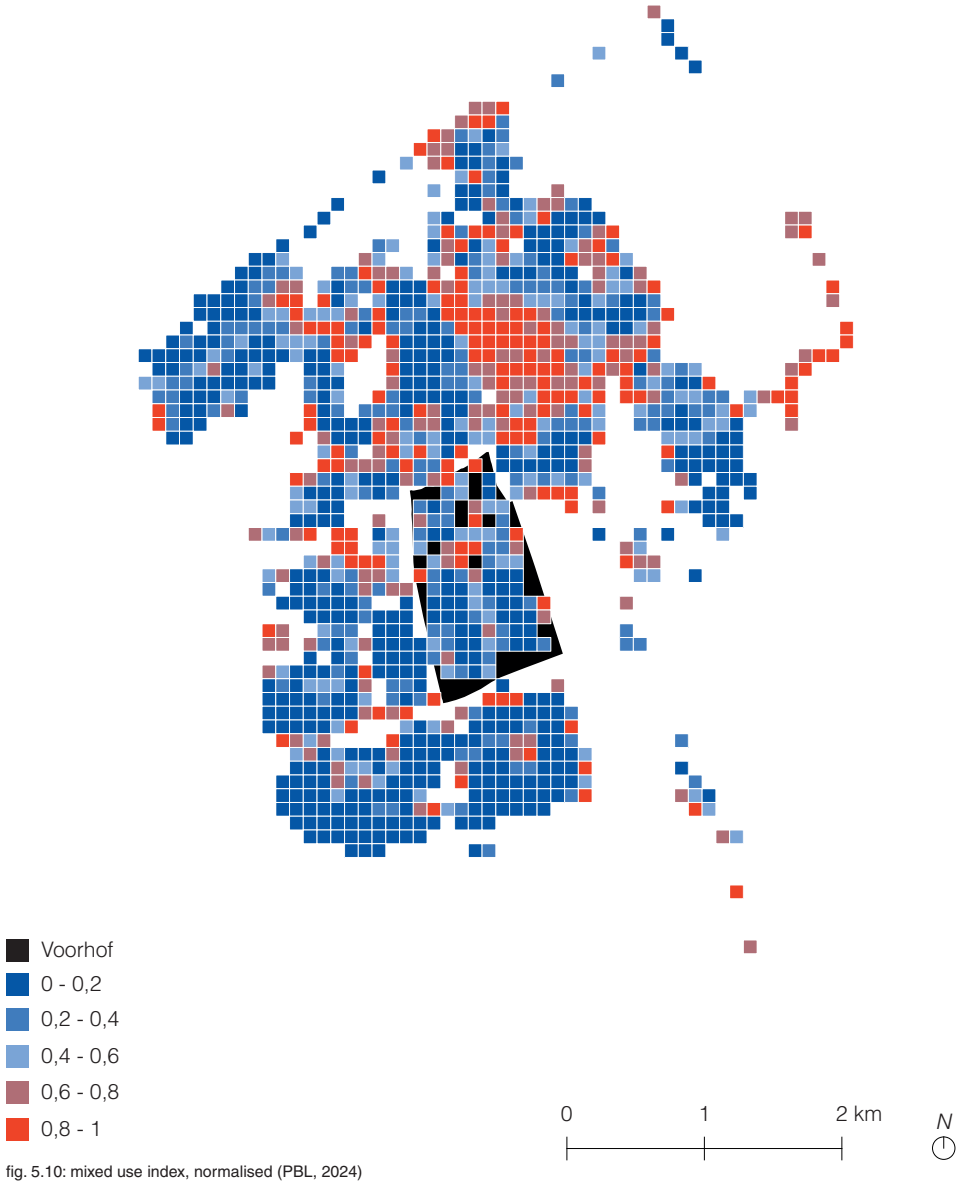


fig. 5.10: mixed use index, normalised (PBL, 2024)

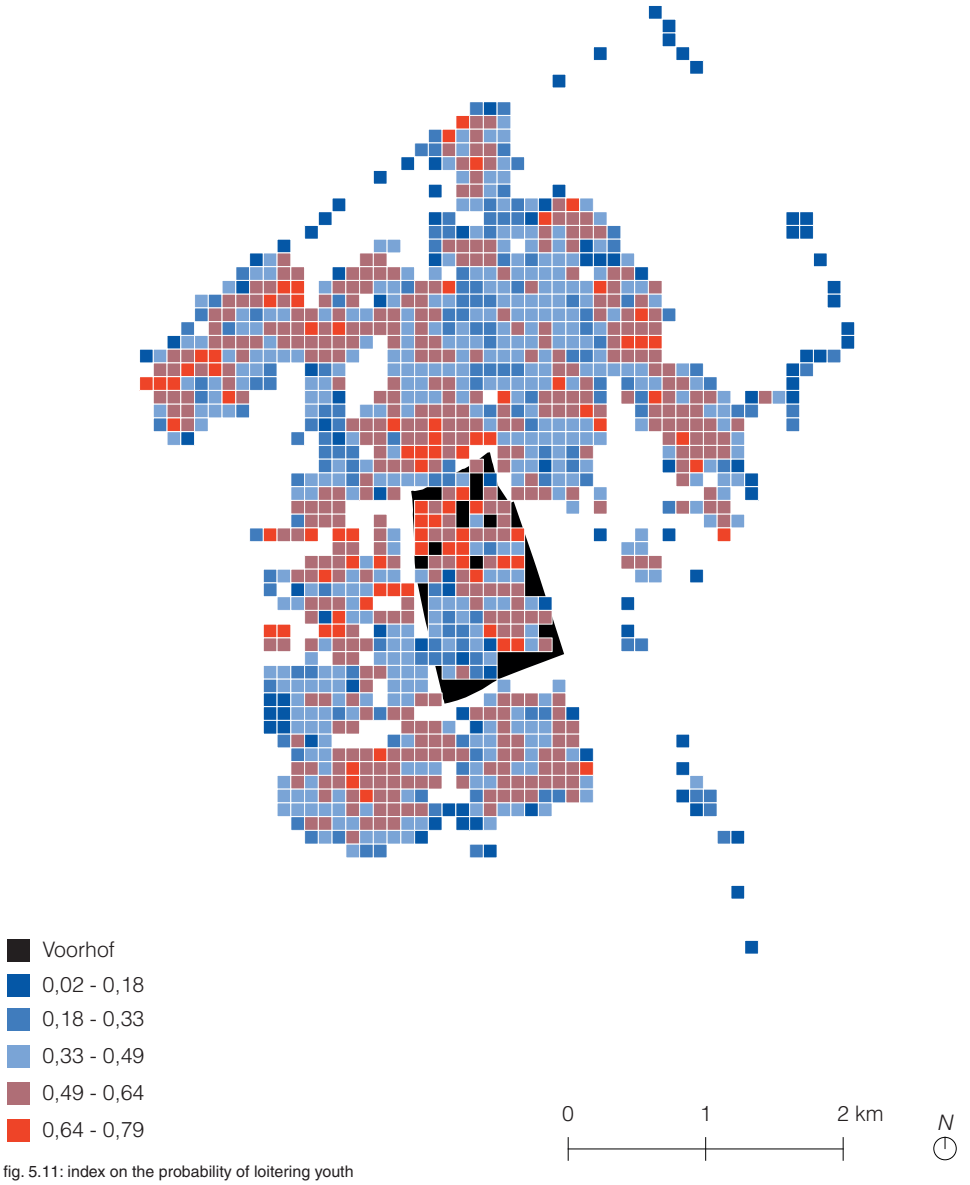


fig. 5.11: index on the probability of loitering youth

The data collected in the previous analyses is used to construct an index, indicating the probability of the presence of youth in public spaces. This is done through GIS-based MCDA (Multi-Criteria Decision Analysis), as this method can be used to combine the questions of *what* and *where* in multifaceted questions (Greene et al., 2011). As all data is not immediately comparable, it has to be simplified to a comparable scale, both spatially and numerically.

All acquired data has been aggregated into a 100 by 100 meter grid supplied by CBS (2025b). Alongside this, the data has also been normalised and is now measured on a scale ranging from 0 to 1. When a value of 0 is given to a grid cell, it means that the measured socio-spatial aspect within this area has little likelihood of the presence of youth groups in public space. At the other end of the spectrum, a value of 1 indicates that there is a high probability of youth groups being present in public space.

After spatial and numerical normalisation of the data, weights are assigned to the different aspects to signify the importance of each indicator. In this case, the highest weights have been assigned to the presence of children and the amount of living space per person. The combination of these factors, children of larger families in smaller dwellings, can be identified as one of the main reasons behind hanging out in public space. The analysis concerning angular integration and the mixed use index work complimentarily and have been assigned a lower weight, as these areas will be more often attract youth groups after the first two criteria are met.

The results from this index indicate that there are two main centres for where the presence of youth groups can be expected in public space: Poptahof and Westerkwartier. These two areas are located in the neighbourhood of Voorhof or just north of it. It is also notable that the southwest of Voorhof stands out from the rest of the neighbourhood, as an area where youth presence in public space is less likely to occur.



fig. 5.12: weighting of the four socio-spatial indicators



fig. 5.13: youth facilities in Voorhof

ANALYSIS OF VOORHOF

As has been previously depicted in figure 2.10, reports of nuisance by youth are disproportionately concentrated in the city centre and Voorhof. Looking further into this map, it becomes visible that within Voorhof, the reports of nuisance are also disproportionately concentrated toward the northwest. In order to gain a greater understanding of the geographies of hanging out, it is important to understand the environment in which the daily lives of youth take place.

This is done through creating a subdivision into first, second and third spaces for youth. This subdivision, established by Ray Oldenburg (1999), makes a distinction between the home environment, so-called first spaces, the work environment or second spaces and a more vague third space. Oldenburg describes this as informal public gathering places with a community-building function.

For the youth, the home environment remains a first space, education, specifically high schools and colleges in the case of the studied age group, is seen as their work environment, their second space. Third spaces are less easily defined; youth centres function as informal gathering places for youth, but public sports facilities are often mentioned in conversations with the youth as important neighbourhood facilities. Finally, retail can also be considered a third space for youth (Pyyry & Tani, 2016).

Through the mapping of these first, second and third spaces, it becomes apparent that there is a pattern of clustering in Voorhof. Third spaces for the youth are centrally located, as a result, nuisance by youth also occurs at one centrality in the neighbourhood.

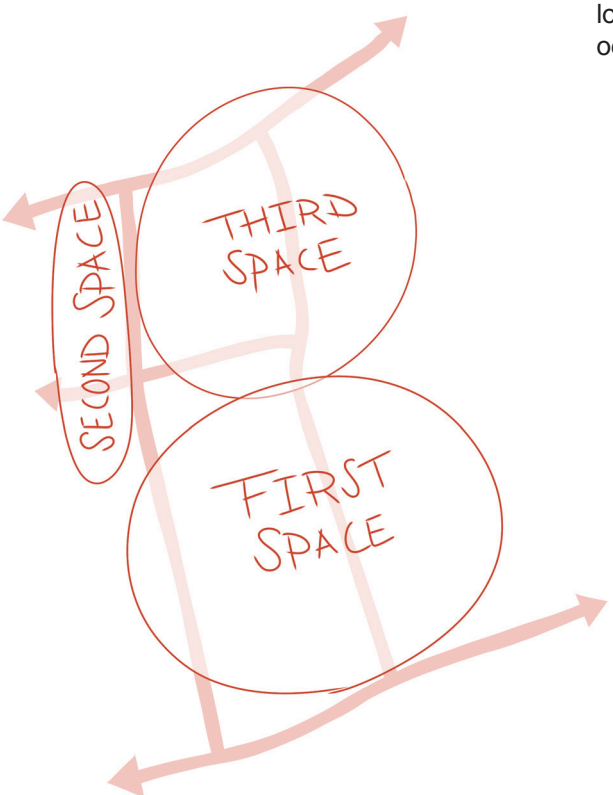


fig. 5.14: unequal distribution of first, second and third spaces for youth







You always need to be somewhere where you can buy food, the supermarket or bakery or something like that



0 100 m N

fig. 5.15: satalite images of the project sites

In order to lessen the amount of nuisance experienced by other neighbourhood residents, a more even distribution of third spaces is needed. This will be done through designing public spaces that are appropriate for youth behaviour. The locations of these public spaces are based upon the MCDA, the analysis of Voorhof and conversations with youth.

Conclusions from the MCDA, the results of which can be seen in figure 5.12, indicate that the socio-spatial aspects of southwest Voorhof do not increase the probability of youth presence in public spaces. The analysis of Voorhof concludes that there is already a larger concentration of third spaces in the north. Therefore, the chosen project sites are located towards the southeast of the neighbourhood, where the socio-spatial aspects do influence the likelihood of youth presence, but third spaces for youth are lacking.

Conversations with youth suggest that access to supermarkets and other food-related retail facilities is regarded as an essential amenity. This has contributed to the exact locations of the chosen project sites within southeast Voorhof.

These locations will be analysed according to their basic spatial context, tightness and looseness (Franck & Stevens, 2007), opportunities for interaction and retreat (Lieberg, 1995) and the behavioural traits of its users.

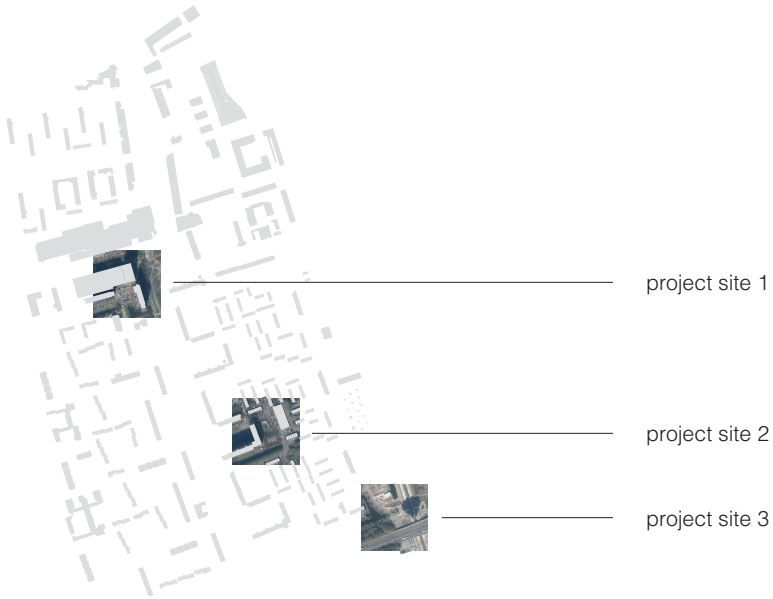
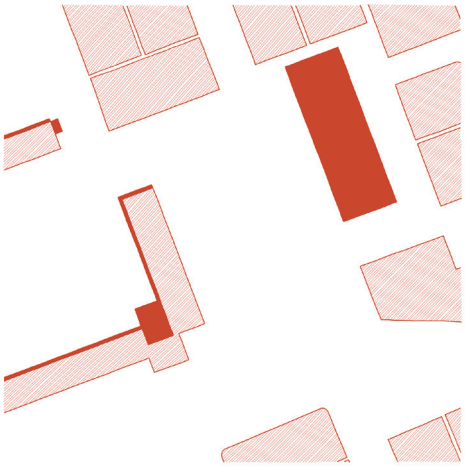
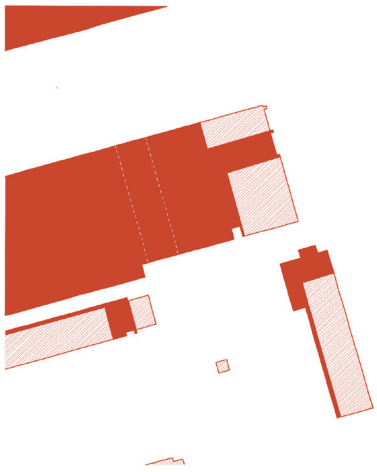


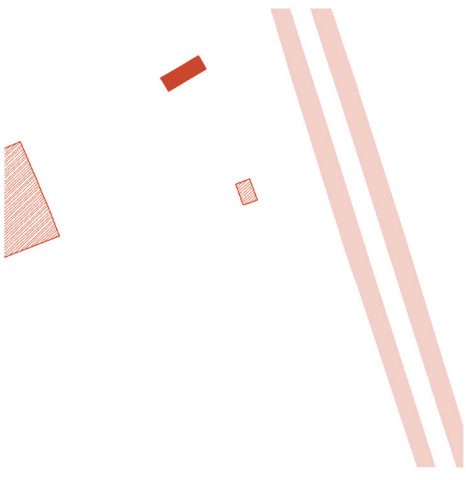
fig. 5.16: locations of the chosen project sites within the neighbourhood













private
semi-public interior
semi-public exterior

0 100 m

N

ANALYSIS OF THE SITES

Conceptions of public and private can differ from person to person, consistent with Lefebvre's (1991) definition of social space, consisting of lived, conceived and perceived space. The boundaries between public and private urban space are becoming increasingly blurred due to the emergence of urban spaces with a hybrid character, such as shopping centres (Nissen, 2008). In this analysis, the focus is on the lived space of adolescents and their definitions of public and private.

project site 1:
Located in a residential neighbourhood, most buildings have a highly private identity. The supermarket however, as many other food-related retail facilities, works as a meeting space for youth. Therefore, the supermarket, like shopping centres (Tani, 2015), becomes a semi-public meeting space for youth.

project site 2:
In conversations, youth mention using the galleries and stairwells of their apartment buildings to play with friends. This suggests that these spaces are seen as public, at least when growing up. Therefore, they continue to use these places to meet with friends in adolescence. However, the transition from childhood to adolescence is less clearly defined for the youth than for an adult (Barron, 2022). As a result, the youth can experience exclusion from the environment they still view as public, causing friction between users.

project site 3:
Areas around train stations are often very public in nature; in this case, there is almost no private space in the surrounding environment. The abundance of public space can influence a lack of feelings of territoriality (Newman, 1972) and therefore is less supportive of appropriation.

I think growing up in an apartment building is nicer than other houses. We automatically have friends with whom we can play in the galleries and stairwells.

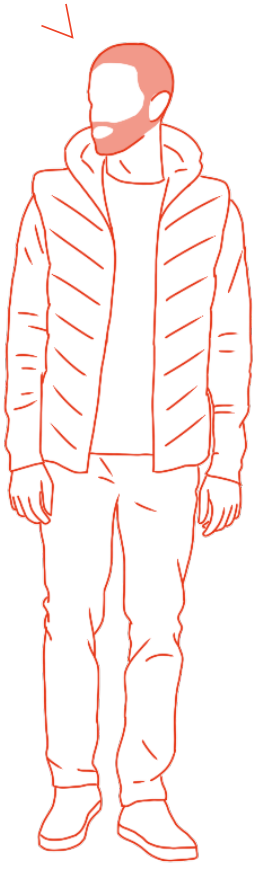
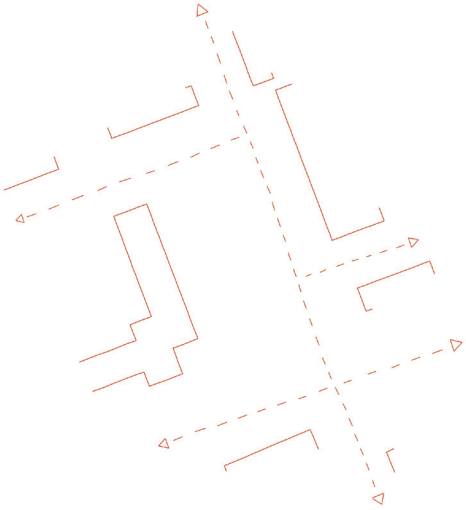
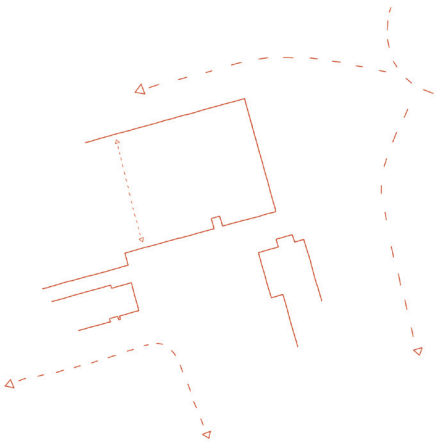


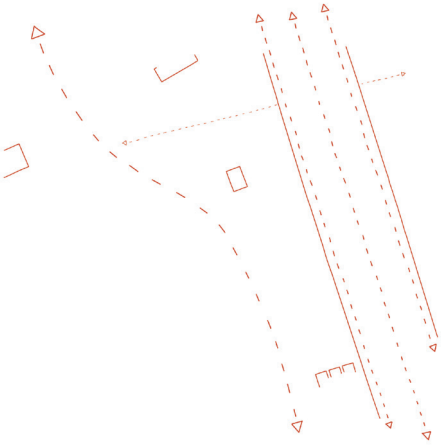
fig. 5.17: analysis of public and private space













··· main routes

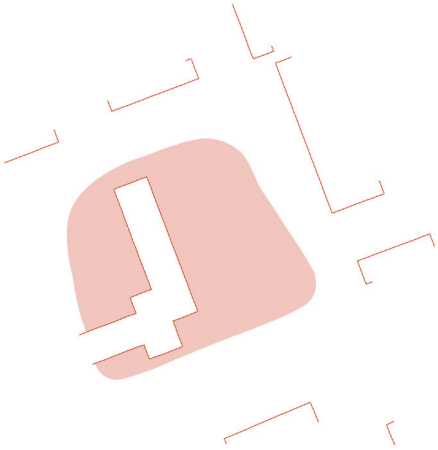
According to Conzen (1960) the urban plan can be subdivided into three parts: streets, plots and buildings. This subdivision forms the basis for the analysis. In this analysis, the three basic elements are adapted slightly. Instead of using only streets, all major “flows” are identified, including trains, as well as cyclist and pedestrian routes. Buildings have been prioritised over plots, as this analysis forms the basis for the design of public space, which may be extended into plots when needed.

project site 1:
The post-war, high-rise street network within the residential zones of the neighbourhood often follows a rigid structure. The combination of low- and high-rise dwellings alongside a rigid street network often leaves large open spaces in the vicinity of high-rise apartment buildings.

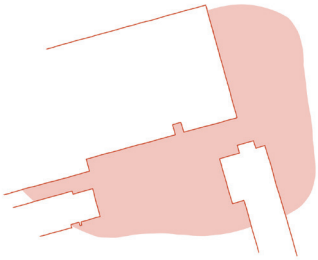
project site 2:
The area considered for reconstruction is located on the corner of a residential road, and is currently in use as a parking lot for the nearby retail. Due to recent renovations this parking lot has become unnecessary, as the parking needs of visitors have been accommodated within the renovated building. The building also functions as a passage towards the shopping centre.

project site 3:
The train tracks around Delft Campus station create a barrier, through which most movement in the area is oriented parallel to the tracks. A tunnel exists to enable movement between the two sides of the tracks, but is rarely used as a passage throughout the neighbourhood, as a more direct route exists over the road located above the tracks.

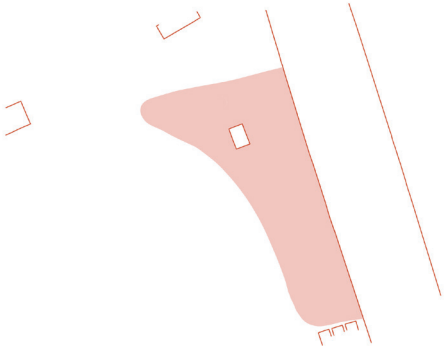
fig. 5.18: analysis
of main routes













public space

Everything which lies in between plots or buildings and streets can be considered public space. This public space cannot merely be defined as a single shape, but rather flows around buildings and within streets. For some youth, the public space around their apartment building can be considered a backyard.

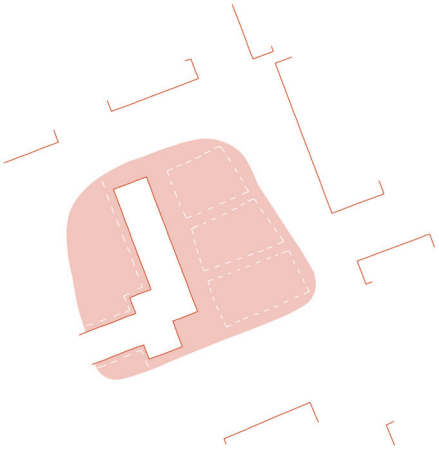
project site 1:
When public space is created by the void left in the surroundings of high-rise apartment buildings, it flows around the building, thereby including the entrance, parking lot, facilities and the areas considered by youth to be their backyards.

project site 2:
The current parking lot is bordered by three high-rise buildings, this area can therefore be considered an enclosed open space. This was previously identified as a recurring spatial element in the geographies of hanging out. Therefore, when designing, it should be considered that initially the centre will be appropriated, after which other youth groups will locate themselves on the edges.

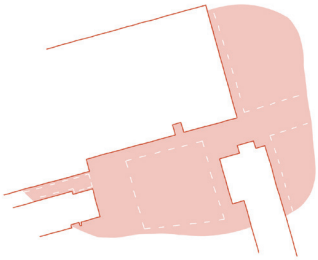
project site 3:
The shape of the station square is moulded by the parallel train tracks and roads, eventually being bordered by the bicycle and pedestrian tunnel to the north, and bicycle parking structures to the south.



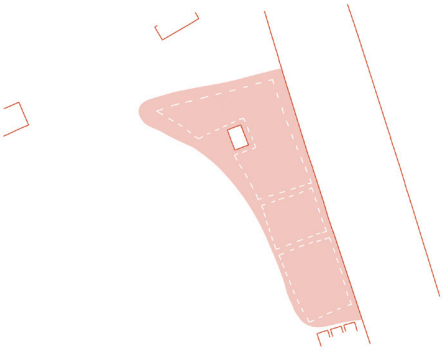
fig. 5.19: analysis of public space created by the main routes













0 100 m N

subdivision

The public space, shaped by buildings, plots and streets, is often already subdivided into *rooms*. These rooms can be created by physical barriers, but can also be influenced by other factors. Physical barriers can be formed by vegetation and the buildings around which the public space is created, while other factors, less physical barriers, which can create a subdivision of public space include the materialisation of the surface and visible functions. Another, less visible factor can be the flow of people.

project site 1:
The rooms at this project site are created through vegetation and the high-rise apartment building itself. Within the subdivision of public space by vegetation, different functions, such as a football field and playground, can be found, further reinforcing the subdivision. Other rooms consist of either empty green space or a parking lot.

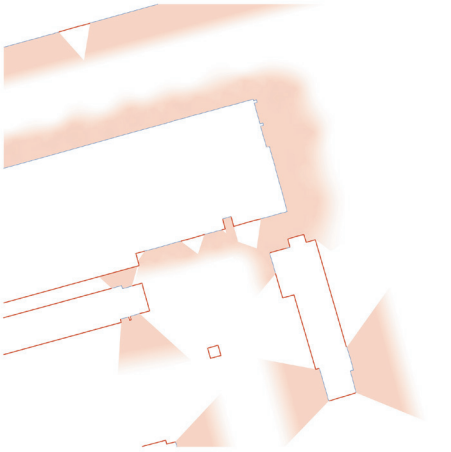
project site 2:
The subdivision of public space is not always created by visible barriers, but can also be defined through the flow of people, as indicated by pavement materialisation. Between these flows, such as sidewalks and cycleways, different spaces can be identified. Central in this location is the previously discussed parking lot. West of the parking lot lies an unused alleyway, on the other side lie two *rooms* consisting of unused green space.

project site 3:
Public space around Delft Campus station can be subdivided into three parts: covered bicycle storage beneath the overpass, uncovered bicycle storage, and a station square. This station square remains largely unused, as there is little reason to stay. The area lacks facilities and is therefore primarily used as a space of transit.

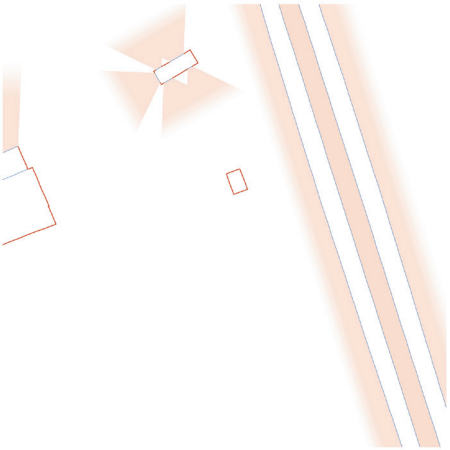
fig. 5.20: analysis of subdivision of public space













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eyes on the street from plinth

As has been stated multiple times before, youth use public space as a meeting place to get away from constant supervision. However, supervision does not have to come from a teacher or parent, but can also be present in public space. This is often referred to as eyes on the street (Jacobs, 1992) or natural surveillance (Newman, 1972). Supervision of this sort can be subdivided into two types: surveillance from buildings and surveillance from public presence. These differ from each other in their temporality, surveillance from buildings can be seen as constant surveillance, as the point of surveillance is fixed. Surveillance from public presence on the other hand, is only temporary, as it typically comes from passers-by.

project site 1:
Like many other residential neighbourhoods, natural surveillance mostly originates from the front façade of the dwellings. Other facades are either closed or do not offer natural surveillance as they are oriented towards the backyard. High-rise apartment buildings in post-war neighbourhoods are infamous for their closed plinths, and therefore offer little to no natural surveillance at street level.

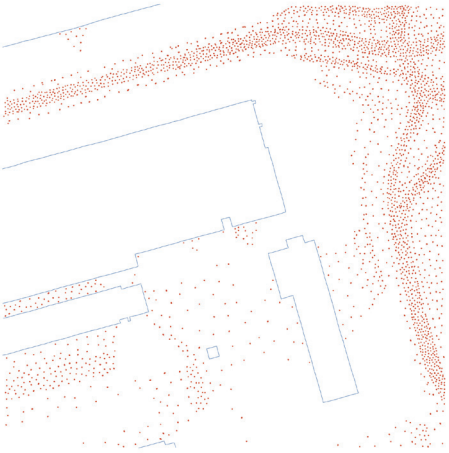
project site 2:
The buildings surrounding the second project site can be divided into two categories, influencing their capacity to provide surveillance over the area: post-war, high-rise apartment buildings and newly constructed, mixed-use, high-rise buildings. As stated above, buildings that fit into the first category are infamous for their closed plinth, while newly constructed, mixed-use, high-rise buildings often have public facilities in the plinth and therefore generate many eyes on the street.

project site 3:
The lack of buildings in the surroundings of Delft Campus station leads to a lack of natural surveillance from buildings. However, as this area is a transportation hub, there are large numbers of eyes on the street from passers-by. The platform itself also offers a limited degree of natural surveillance, as it provides temporarily fixed points of surveillance.

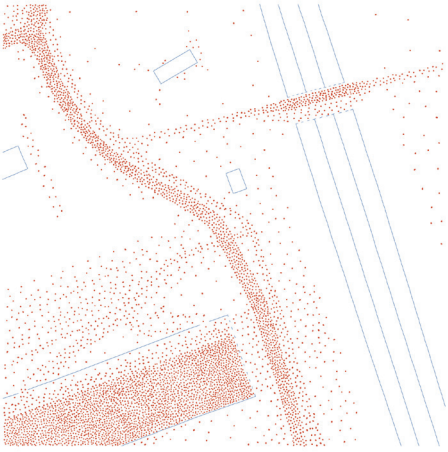
fig. 5.21: analysis of 'eyes on the street' through open plinths













tight loose

0 100 m N

The concepts of tight and loose urban space (Franck & Stevens, 2007) have been previously introduced. This defines the degree to which public space allows for unwanted behaviour. For the youth, it is important that they have opportunities to test societal boundaries, therefore, some tightness of public space is required. Franck & Stevens discuss four phases, among which appropriation and tension. In these phases, youth behaviour can be seen as transgressive, but does not cause excessive nuisance.

In these analyses, all public space, except areas subject to “eyes on the street” or “natural surveillance”, is analysed.

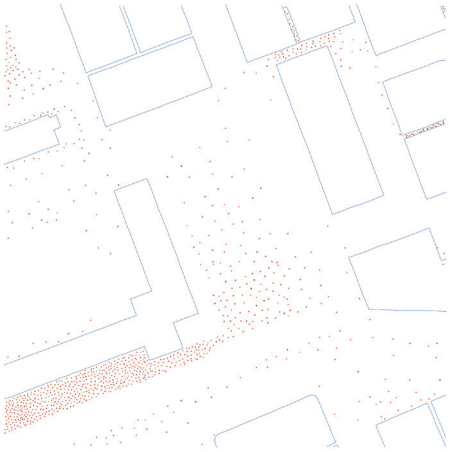
All three studied sites have one thing in common when analysing tight and loose urban space. Roads are always considered tight spaces, while this may seem obvious, this is very characteristic of the post-war, high-rise neighbourhood. These neighbourhoods have been designed according to functionalist principles, and therefore, the road is merely a place of transportation and not a place for playing children, or loitering youth, uses that are often more acceptable in other neighbourhoods.

project site 1:
This area clearly illustrates the difference in tight and loose space in the post-war, high-rise neighbourhood. While the roads, especially those that are frequently used, and the back alleys can be considered very tight spaces, the surrounding area, often unused green space, are very loose. The sidewalks in between are the only areas which can be considered places of appropriation or tension, and are therefore suitable for youth use.

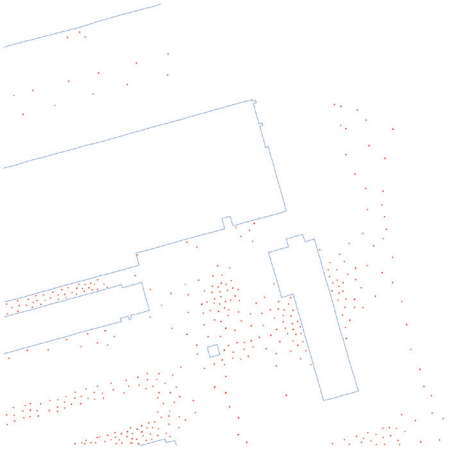
project site 2:
The same applied to the second project site. Roads function as tight areas, while left over spaces are generally loose. However, this site contains additional tight spaces. An alley, for instance, is physically tight and prone to noise pollution for adjacent residents. Because of this, all behaviour which takes places here can be considered unwanted. Similarly, an entrance to a different apartment building located within a setback creates a tight space, where the presence of youth groups can generate feelings of unsafety.

project site 3:
These feelings of unsafety are also common in and around underpasses (Janssen & Goorden, 2022). Two such underpasses are located near the train station and can be considered tight spaces due to their association with perceived unsafety.

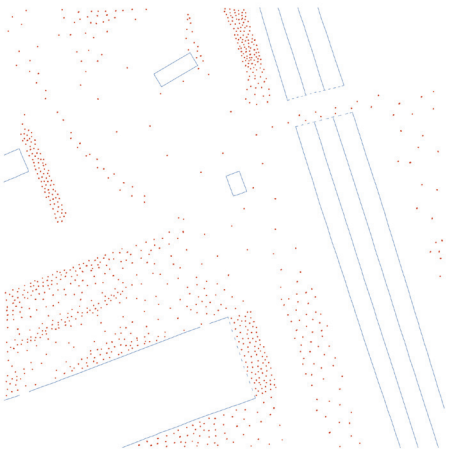
fig. 5.22: analysis of tight and loose urban space













retreat interaction

0 100 m N

In addition to the concepts of tight and loose spaces, places of interaction and places of retreat are also key concepts used throughout this thesis. These places play an important role in the development of youth, as they allow them to test different behaviours and thereby societal boundaries, but also offer them the privacy they seek when retreating to public space (Lieberg, 1995). Lieberg states that “it is important to protect their free zones, both backstage and on stage, it is essential that these places include both places of retreat and places of interaction” (p. 740), reiterating the need for both types of places in close proximity of each other, allowing the youth to shift between them.

This analysis builds upon the analysis of loose and tight space, excluding the spaces which are considered *too tight*, as all behaviour other than the predetermined function is unwanted in these areas.

project site 1:
The presence of a supermarket in the area ensures the presence of other residents, making the surrounding public space a place of interaction. The intensity of interaction decreases gradually, especially in the areas subdivided by a barrier of dense vegetation, limiting the opportunities for interaction. The backside of the apartment building offers favourable conditions for a place of retreat, as natural surveillance is limited due to the presence of two floors of closed plinths and the absence of traffic.

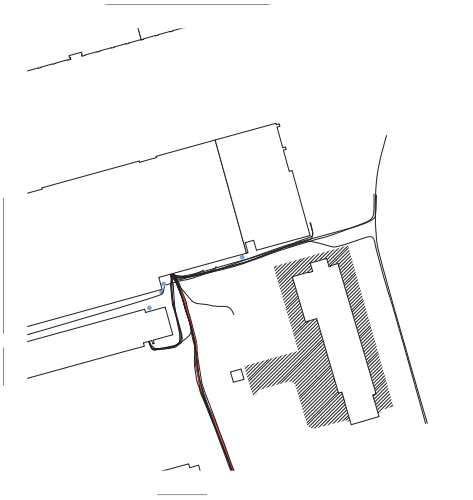
project site 2:
Similar to the previous analysis, the presence of different facilities, among which a supermarket, ensures the presence of others and thereby supports the conditions for a place of interaction. However, this area lacks a clearly defined place of retreat, suitable for appropriation. Although the alley may function as a place of retreat, potential noise pollution from youth groups makes it unsuitable for appropriation in its current state.

project site 3:
While a train station may appear to be a major place of interaction, due to its high volume of users on a daily basis, the analysis indicates that the opportunities for interaction are limited to the relatively small station square, extending in small amounts towards the bicycle storage. In contrast, places of retreat are more common, as this area does not attract many visitors, as it holds no other function than an area of transit.

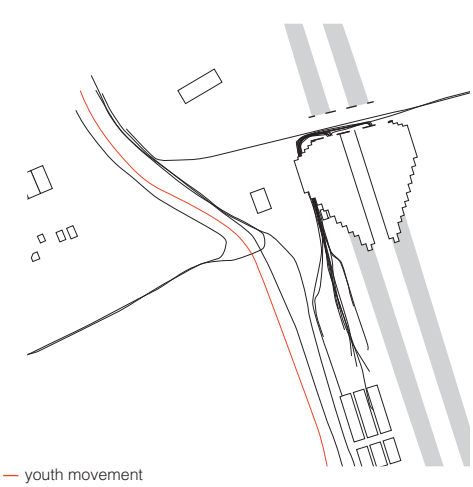
fig. 5.23: analysis of places of retreat and places of interaction













— youth movement
— other than youth movement
youth interaction
other than youth interaction
// under construction

0 100 m N

To build upon the analysis of interaction and retreat, the actual movement and behaviour of the users of public space at the selected sites were analysed. During observations, the routes of pedestrians, as well as youth groups, were tracked. A distinction was made between pedestrians and youth groups, as they serve different functions. Pedestrians provide opportunities for interaction, more than cyclists, as the window for interaction is limited, or drivers, for whom the window is even smaller and further limited by the car as a physical barrier. Youth groups were analysed, rather than individual adolescents, as youth behaviour is influenced by the presence of peers (Tomé et al., 2012). This distinction between pedestrians and youth groups is also a distinction between the objects and subjects of interaction. Therefore, in addition to movement, interaction was also tracked, distinguishing in interactions among youth, interactions among other than youth, and cross-interaction.

project site 1:
Visitors of the supermarket primarily use the adjacent sidewalk, which limits opportunities for interaction from the other side of the road. A notable exception is the desire path connecting the back entrance to the apartment building with the entrance of the supermarket. This is also where youth interaction is currently mostly located, as this area contains secondary design elements which provide the opportunity to linger.

project site 2:
Whereas human behaviour at the previous project site could be considered versatile, this location can be characterised by a limited number of main routes. These routes either originate from the main entrance to the apartment building or connect surrounding streets to nearby facilities. It should be noted that one of the apartment buildings was under construction during observations. However, similar movement patterns can be expected, as both buildings consist of student housing and therefore a similar demographic.

project site 3:
Movement observed around the train station can be characterised as monotonous. The area is rarely used by passers-by, but primarily by users of public transport. Therefore, human movement through the area is not constant; instead, larger groups of transit users come and go several times per hour. Pedestrian movement is limited to transfers from the train to the next form of transport, mainly bicycles, and is thus also spatially limited to the station square.

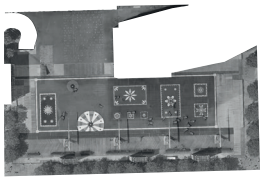
fig. 5.24: analysis of human behaviour


06. REFERE

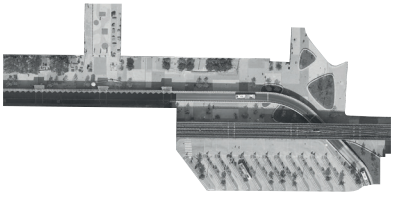

ICE-PROJECTS



Superkilen, Copenhagen



Schouwburgplein, Rotterdam



Zuidplein, Rotterdam

fig. 6.1: overview of reference projects

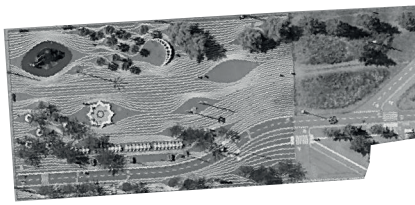
The selected project sites, identified as suitable areas for youth use through geographical analysis and ethnographic research, are currently not actively used by youth. Therefore, it remains difficult to predict how these spaces may be appropriated once the design of public space becomes more accommodating to youth use. In order to gain deeper understanding of potential youth use within the project sites, human behaviour patterns are studied at selected reference projects. The behavioural analysis makes a distinction between youth and other users of public space. The reference projects are selected based on conclusions from the geographical analysis of the selected project sites.

project site 1 - Superkilen, Copenhagen
The first selected project site can be characterised by the clear distinction between places of retreat and places of interaction. Therefore, a reference project was sought which contains a similar differentiation between zones, while remaining a relevant case study in relation to youth in Voorhof. Superkilen, located in Copenhagen, meets these criteria. It is subdivided into three areas, each with a distinct function, and is located in an ethnically diverse neighbourhood (BIG, 2012), similar to Voorhof. It aims to cater to all residents by implementing features from different cultural contexts.

project site 2 - Schouwburgplein, Rotterdam
Multiple high-rise buildings can be considered as enclosing features of project site 2. The site contains many facilities in its direct vicinity, which may create opportunities for interaction. At the same time, this project site should be especially mindful of issues concerning perceived unsafety. The chosen reference project for this location is Schouwburgplein. It is likewise enclosed by high-rise buildings on multiple sites, offers different facilities in the direct vicinity and has known problems concerning the perceived safety in the past (OPEN Rotterdam, 2025). An additional similarity between the two sites is that their previous and current function as a parking areas.

project site 3 - Zuidplein, Rotterdam
The third chosen project site, the area around Delft Campus train station, is characterised by its primary function as an area of transit. Although the area does not currently have any other functions, it can still be considered a tight space due to the presence of multiple underpasses. Metro and bus station Zuidplein in Rotterdam is, similar to Delft Campus train station, often merely used as an area of transit and contains underpasses, making it a suitable reference project. While Zuidplein contains a greater variety of functions, the square itself can hardly be considered an area of recreation and can therefore still function as a relevant reference project for the Delft Campus station area.







1. When visiting Copenhagen's Superkilen, most youth who were observed and were actively spending their time in the park, would also be actively participating in sports around the designed sports facilities.

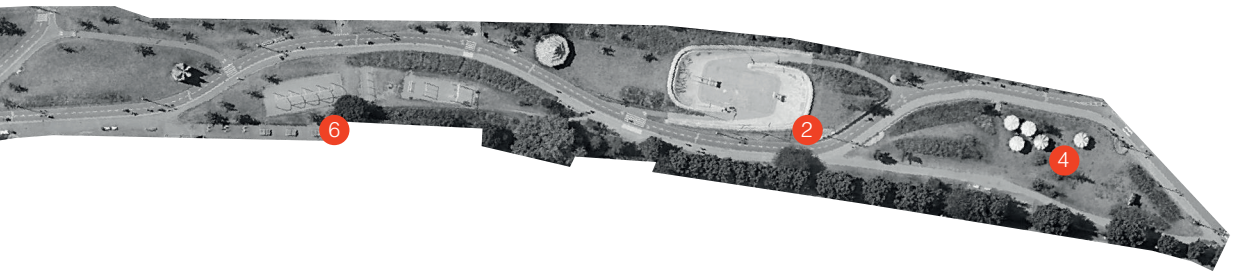






fig. 6.2: conclusions from observations on youth behaviour at Superkilen, Copenhagen

SUPERKILEN, COPENHAGEN



3 The youth barely use the park for
4 loitering or hanging out. Near the skatepark, recesses of buildings are appropriated by youth groups. However, this appropriation of space can be seen as a side effect of the existing functions focusing on sports. Hanging out is not the main activity supported by the design of this public space. Spaces designed as meeting places, set back from the heavily visited parts of Superkilen, remain unused by youth groups.





5 Signs of youth presence around the
6 park remain, but seem to be somewhat regulated. Graffiti around the red square, one of the most visited places of Superkilen, has either been subject to removal attempts or has been transformed into murals, characteristic of the “smoothening” of public space (Boer, 2023). Graffiti in the latter, less strictly designed, areas of the park is more characteristic of youth culture, indicating a higher level of tolerance for appropriation in lesser designed public space.











1 Youth need to be able to test
2 societal boundaries in public spaces. One of the ways in which they test these societal boundaries is by challenging the spatial hegemony of adults through appropriation. By using secondary design elements as objects to sit, stand, or hang on they are able to freely express themselves (Duzenli et al., 2010). However, the youth lose the ability to challenge the spatial hegemony of adults when these exact spaces are already appropriated by adults.





fig. 6.3: conclusions from observations on other than youth behaviour at Superkilen, Copenhagen

SUPERKILEN, COPENHAGEN



3 4 Other parts of Superkilen are clearly designed to facilitate an environment for younger children to play in. The presence of children almost always goes hand in hand with the presence of supervising adults. These areas can therefore not be used as a way of retreat from constant supervision, one of the main reasons for adolescents to gather in public space (Lieberg, 1995).





5 6 The largest group of users of Superkilen consists of cyclists who use the park as a means to travel from one end to another. This fast-paced environment leaves little room for interaction between youth and other users.



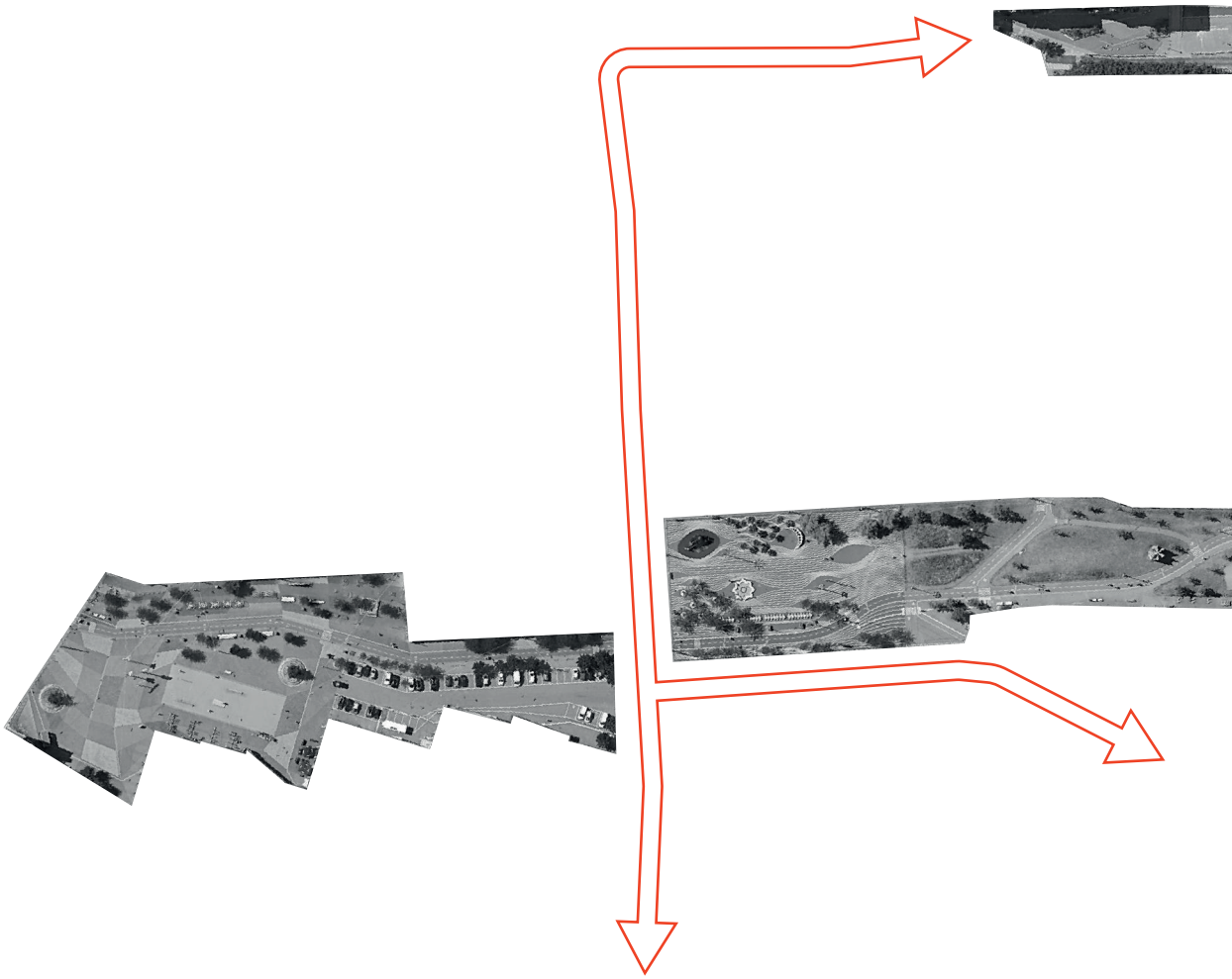
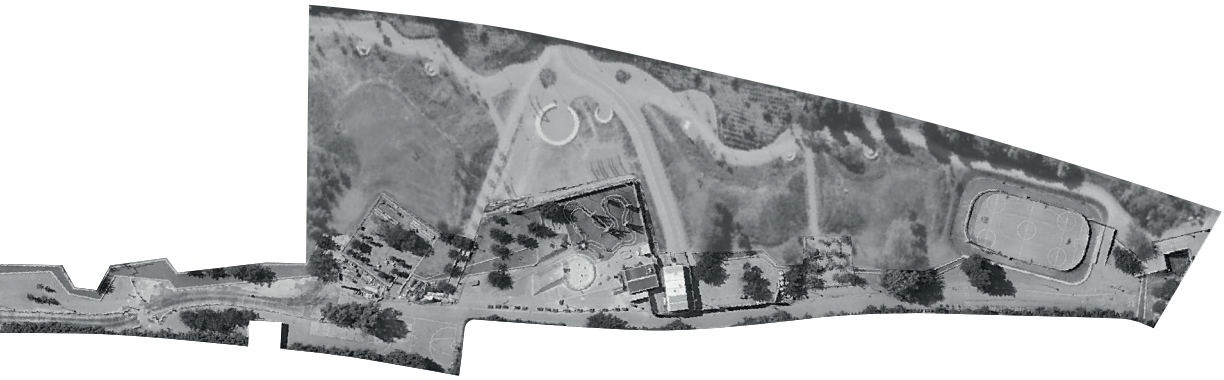
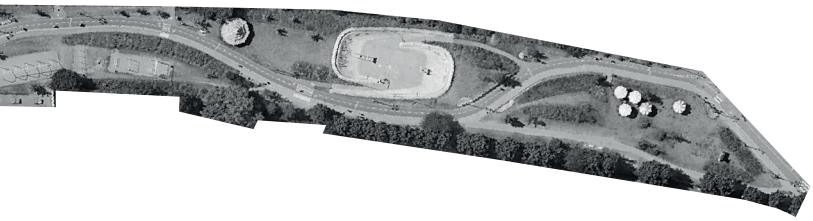


fig. 6.4: conclusions from observations on youth behaviour in Nørrebro, Copenhagen

NØRREBRO, COPENHAGEN

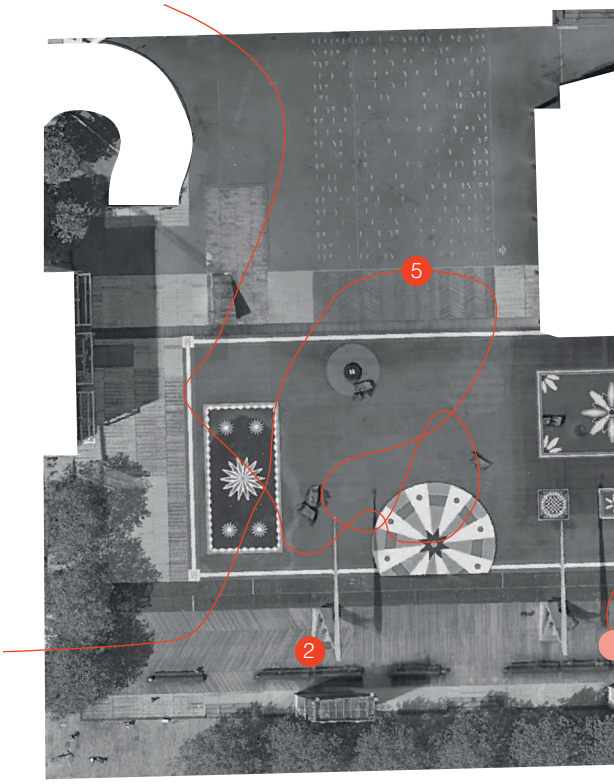




From observations, it would seem that the overly designed, and thus predetermined functionality, of the park does not attract youth groups. However, this does not mean that youth groups are not present in the neighbourhood of Nørrebro. Youth can instead be found in the streets around Superkilen and in the nearby park Mimersparken. This park is less visited, especially by tourists, and offers more space for appropriation. This suggests that youth groups tend to gravitate towards environments which are more ambiguous in nature and where their presence can exert influence on their surroundings.



youth





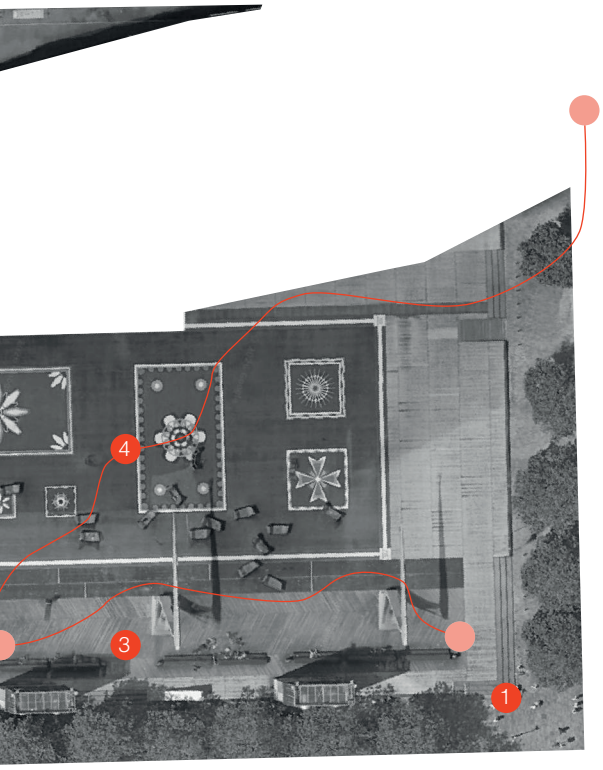


1 Differences in height have
2 previously been identified as common spatial elements in the geographies of hanging out, where they are referred to as secondary design elements. Elements of public space which can be appropriated by youth to stand or hang on or around. This idea is reinforced in observations of Schouwburgplein, where youth groups can be seen standing around stairs, or actively seeking height differences when walking or biking around the square.



fig. 6.5: conclusions from observations on youth behaviour at Schouwburgplein, Rotterdam

SCHOUWBURGPLEIN, ROTTERDAM



3 During observations, it became noticeable that youth groups are more likely to appropriate the *pockets* on the sides, rather than the large open space. This differs from observations of enclosed open space in Voorhof, where the middle is appropriated first. From these observations, it can be concluded that in larger open spaces, the need for the appropriation of micro-spaces by youth (Gray & Manning, 2022) is greater than in enclosed open space.

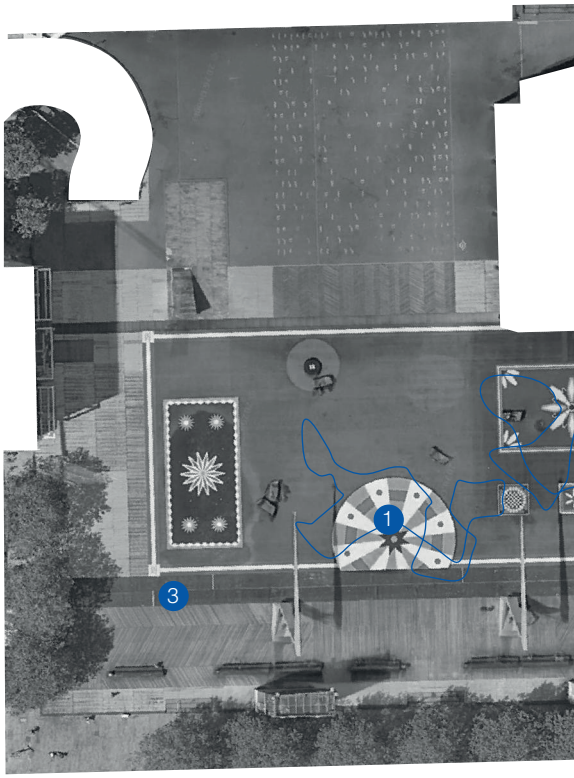




4 Hanging out is not a static activity;
5 youth groups move between micro-spaces, thereby using the entire square. When the square is not dominated by the presence of younger, playing children, the youth can appropriate the square by biking over the artificial grass.

0 25 50 m

N







1 While the youth are heavily represented on Schouwburgplein,
2 they are not the only users of the square. The square is also often used by playing children; their behaviour is perceived as unpredictable and erratic. When the square is appropriated by playing children, the youth are often driven to the sides.



fig. 6.6: conclusions from observations on other than youth behaviour at Schouwburgplein, Rotterdam

SCHOUWBURGPLEIN, ROTTERDAM



3 As opposed to the youth, other users of the square move in more predictable patterns, mostly along the predetermined paths. Therefore, the places along these paths can be considered places of interaction, making them attractive for the youth to appropriate.

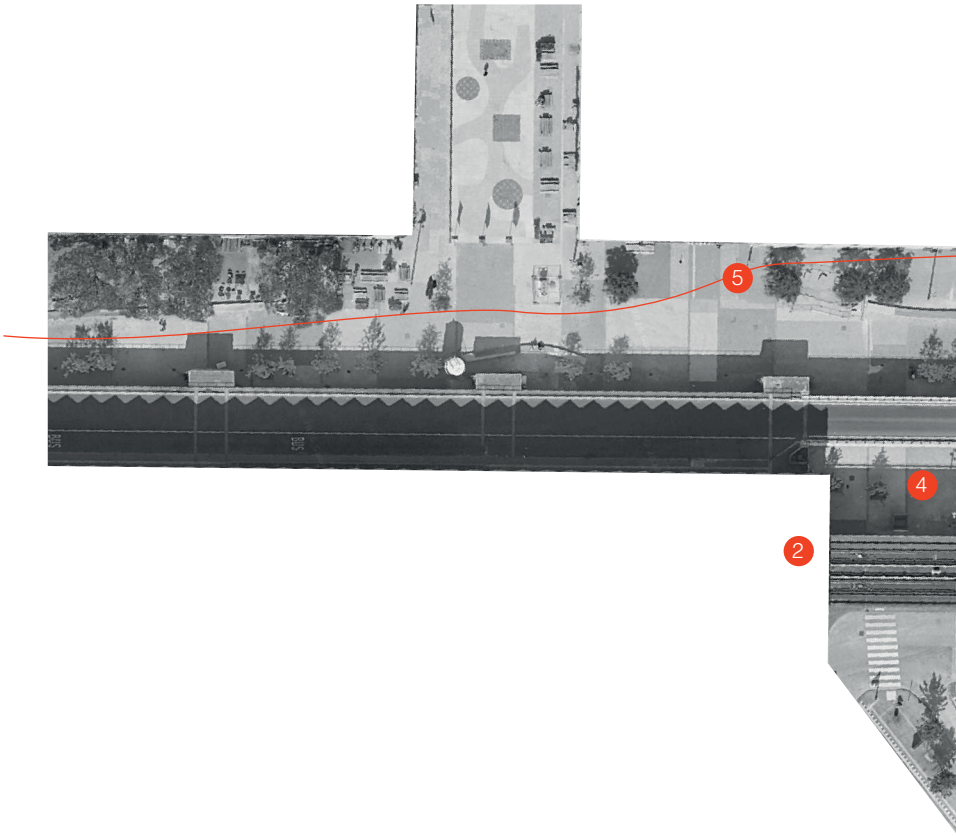


4 Meetings between strangers, whether youth or non-youth, occur around the benches in most cases. Most conversations are short, often involving urban dwellers, asking for a cigarette, but nonetheless, these benches provide many opportunities for interaction.

0 25 50 m

N

youth







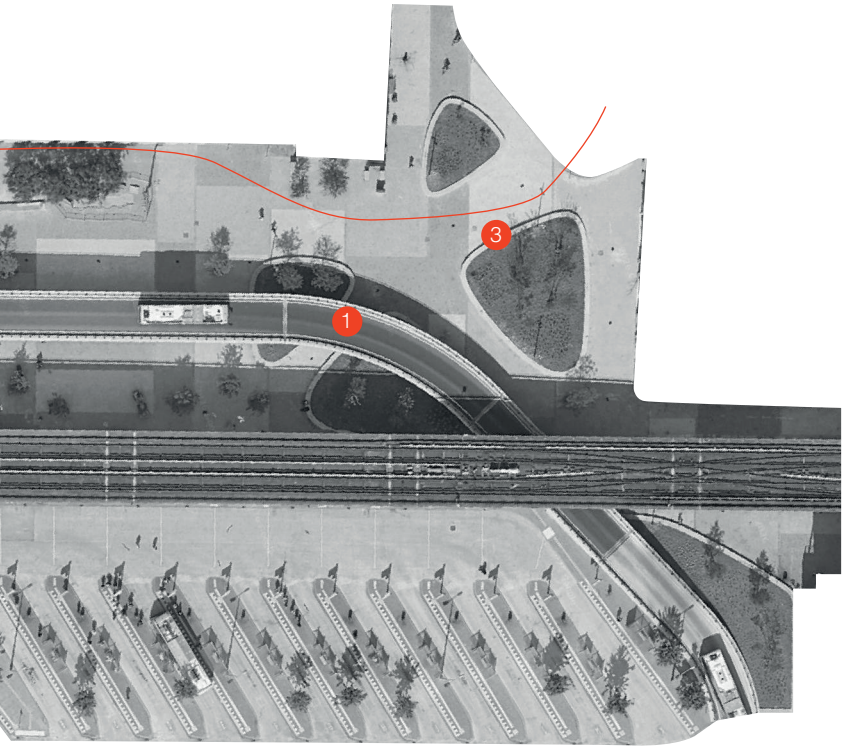
1 Similar to observations of youth
2 behaviour around Schouwburgplein, the youth at Zuidplein also appear to appropriate *pockets* of urban space. Spaces containing enclosing elements, such as underpasses or fenced areas, are often used for appropriation. Especially the appropriation of underpasses is notable, as multiple underpasses are also present around Delft Campus train station.





fig. 6.7: conclusions from observations on youth behaviour at Zuidplein, Rotterdam

ZUIDPLEIN, ROTTERDAM



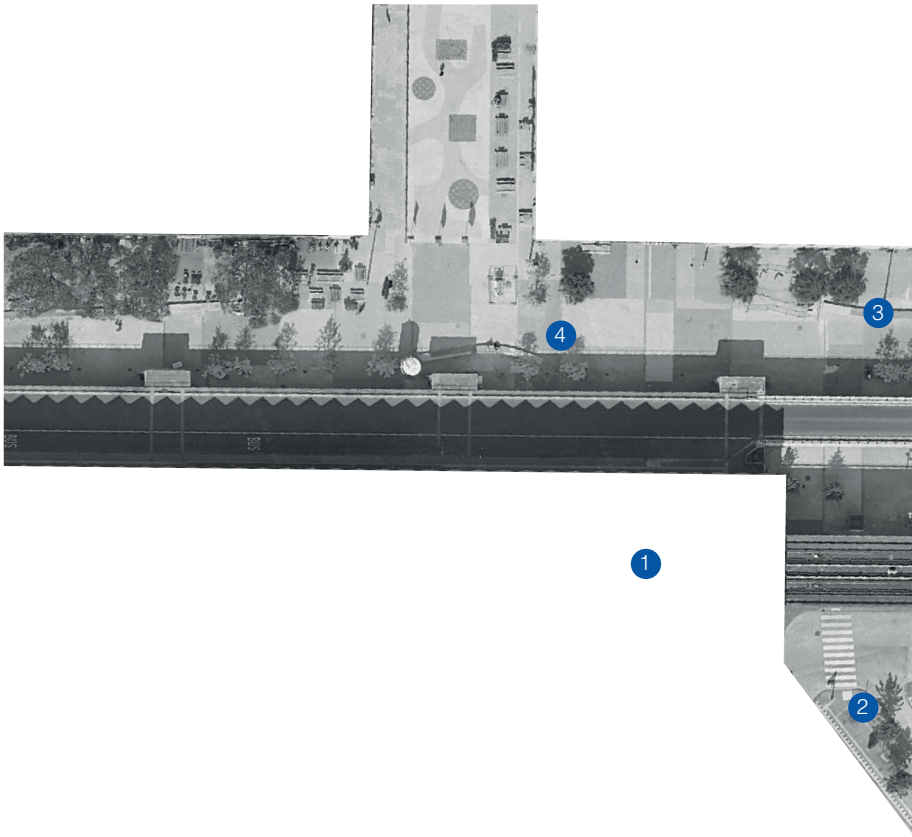
3 4 As has also been noted in observations of the locations identified by the youth in Voorhof during the workshop, secondary design elements are frequently used not only for sitting, but also for standing or leaning on. Around Zuidplein, it was also notable that youth often use their fatbikes for seating. In this sense, fatbikes can also be considered secondary elements of public space, as they are not used according to their primary function.



5 Fatbikes do not only enable youth to bring their own secondary element into public space or to create micro-territories through strategical placement (Visser et al., 2015), both forms of appropriation. It also provides the youth with an opportunity to test societal boundaries. In an area which is mostly used as an area of transit, where most users are either waiting or walking, the speed of fatbikes can disrupt these activities, testing the limits of what is considered acceptable.



other than youth





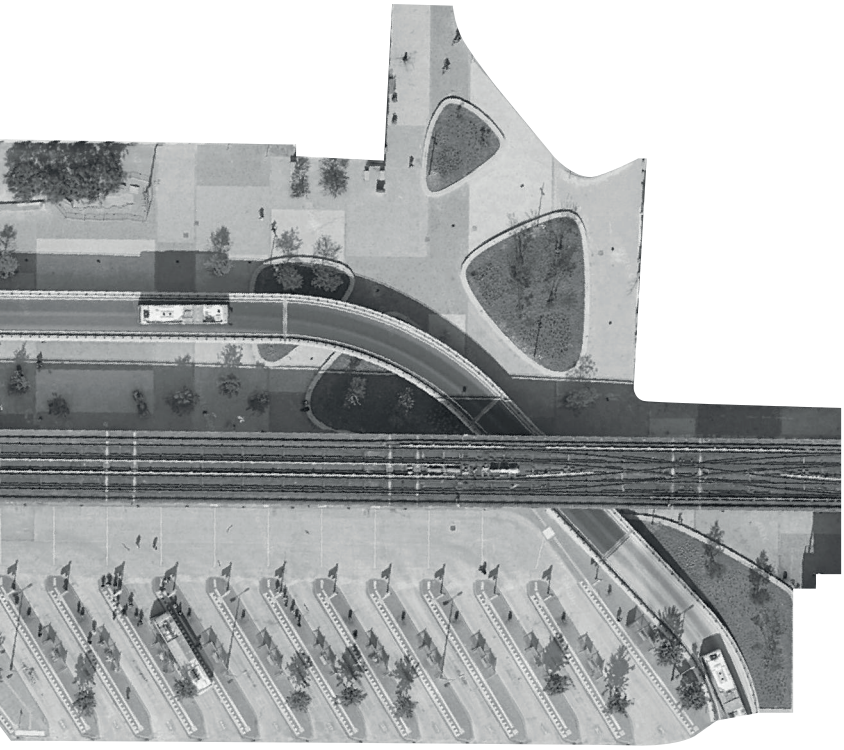
1 For most users, Zuidplein functions as an area of transit. Containing a large metro and bus station, Zuidplein can be considered an important junction in the public transport network of Rotterdam, resulting in a constant flow of visitors throughout the area. However, despite the continuous presence of people, Zuidplein can hardly be considered a recreational square, as most visitors merely move from one destination to another, rather than remaining within the square.





fig. 6.8: conclusions from observations on other than youth behaviour at Zuidplein, Rotterdam

ZUIDPLEIN, ROTTERDAM



2 People who do stay are generally
3 waiting. Most are waiting for their next mode of transportation or are using Zuidplein as a meeting point, from which they move on to their next destination. Altough these users do not stay for an extended period of time, their presence does provide opportunities for interaction for the youth.



4 In addition to Zuidplein's use as an important junction within the public transport network of Rotterdam, the area contains two other attractors, namely Ahoy and shopping centre Zuidplein. These attractors stimulate pedestrian movement throughout the area and thereby create additional opportunities for interaction. These attractors are not present around Delft Campus train station, resulting in limited pedestrian movement.






07. DESIGN

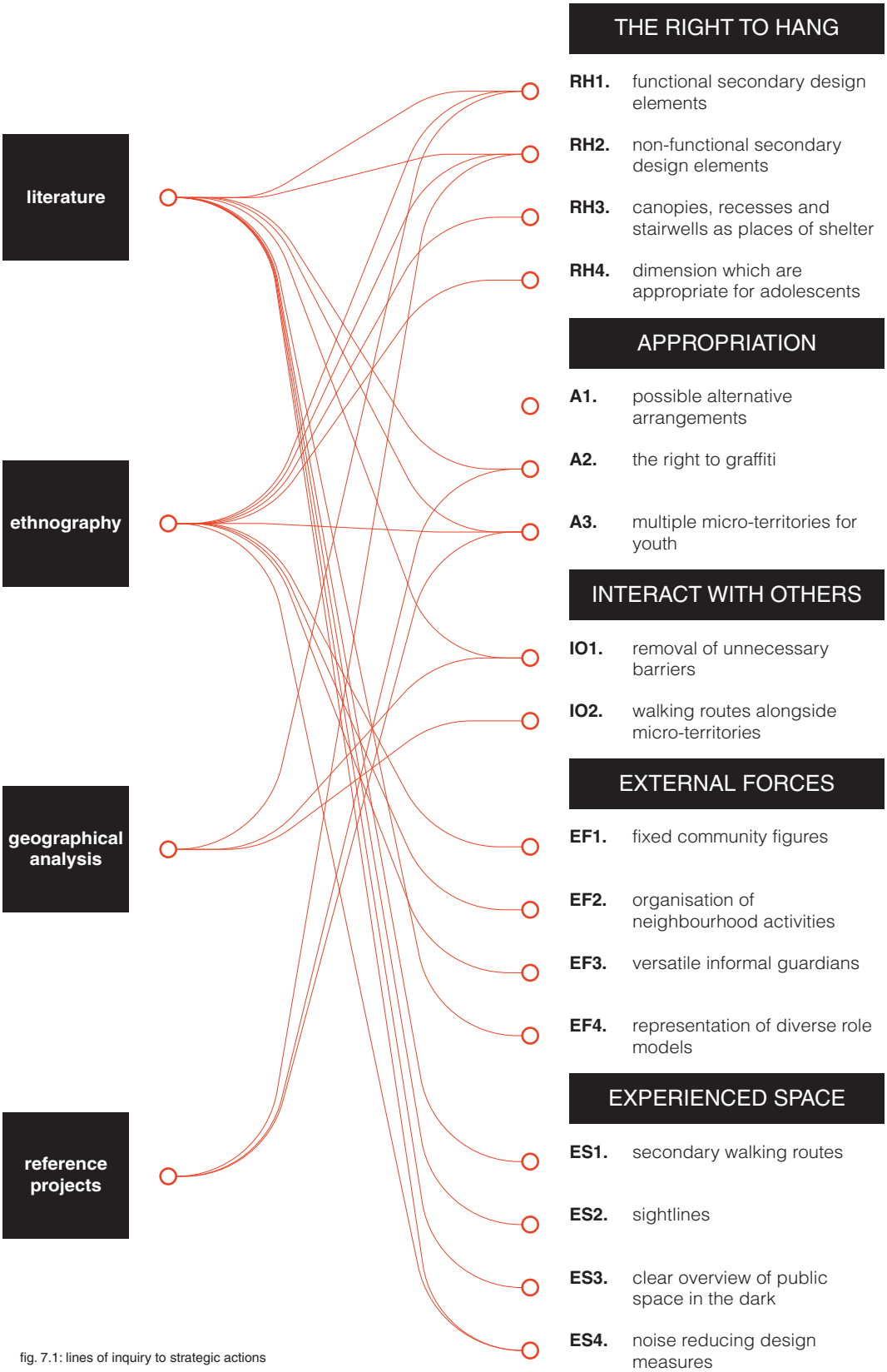


fig. 7.1: lines of inquiry to strategic actions

STRATEGIC ACTIONS

Through this thesis, different methods and sources have been used to draw conclusions concerning the geographies of hanging out in the post-war, high-rise neighbourhood. The synthesis of these conclusion, referred to as strategic actions, are derived from literary sources, geographical analysis, ethnographic research, behavioural analysis of reference projects, and, at times, research by design. The translation of these conclusions into strategic actions provides a framework for spatial intervention, but also procedural actions. Many strategic actions draw upon multiple lines of inquiry, representing their multifaceted nature.

Strategic action are organised into different categories, representing the different needs, wishes and influences affecting the youth, while also providing insight into perceptions of other users of public space. These categories address general facilitators of youth behaviour, opportunities to challenge adult spatial hegemony and test societal boundaries, external influences and the assurance of an environment in which different groups can coexist. Although the different strategic actions within these categories are numbered, they do not embody a hierarchy. Instead, strategic actions should be applied in accordance with the specific needs of the environment.

The designs which are presented in this thesis do not propose a definitive solution, but rather illustrate how the strategic actions can be applied, especially in coherence with each other. Design is primarily used as a method of multidisciplinary evaluation. Most importantly, the design are discussed with youth from the neighbourhood, allowing them to provide feedback and identify places they like or dislike. This is an integral part of participatory action research, in which the initial input of participants is analysed and synthesised into a design upon which the participants can subsequently reflect, ideally starting a new cycle of input, analysis and reflection (Baum et al., 2006). In addition, the designs are evaluated against the key concepts identified in the theoretical framework. The disbalance of places of interaction and places of retreat, alongside the presence of spaces which are either too tight or too loose, were identified as main causes of a monocentric system of disturbances. Geographical analysis of the hypothetical designs should provide insight into the extent to which these issues have been addressed.

RH1.

When designing the functional elements of public space, consider their ability to function as secondary design elements.

Functional elements of public space, such as bicycle parking or fences, can afford opportunities for sitting and leaning. This enables the youth to challenge the adult spatial hegemony through processes of appropriation. When designing these elements, preference should be given to street furniture which can stimulate appropriation; for instance, U shaped bicycle racks rather than the traditional design.

literature — *Duzenli et al., 2010*
geographical analysis — *human behaviour (p. 108)*
ethnography — *secondary design elements (p. 62)*

RH2.

Public spaces should contain non-functional secondary design elements with dimensions fit for standing, hanging or sitting on.

The appropriation of functional secondary design elements by youth challenges the adult spatial hegemony, but can thereby also generate friction. Therefore, it is necessary for public space to also include non-functional secondary design elements that allow for appropriation while generating less friction.

literature — *Duzenli et al., 2010*
ethnography — *secondary design elements (p. 62)*
reference projects — *Schouwburgplein (p. 120) - Zuidplein (p. 124)*

RH3.

Ensure places of shelter within the neighbourhood. Canopies, recesses and stairwells can be places to hang during bad weather.

Youth use public space not only as a meeting place, but also as a space for privacy and personal development. These functions are necessary year-round, therefore, public space should be designed to accommodate these needs throughout the year.

ethnography — *shelter (p. 64)*

RH4.

Design sports facilities with appropriate dimensions for adolescent youth.

Sports facilities vary widely in form and scale, which in turn influences their user demographic. During conversations, several participants have indicated their dislike for football fields with small goals.

ethnography — *lived experience (p. 72)*

A1.

Design objects with the possibility for alternative arrangements.

The need for appropriation by youth has been emphasised throughout this thesis, especially in relation to their need to create micro-territories to be occupied and transformed to their own wishes alongside this need for appropriation (Gray & Manning, 2022). The possibility of using street furniture with alternative arrangements, capable of meeting the different needs of the youth, emerged through a process of research by design, but could also previously been found at Schouwburgplein, where these object were eventually removed due to heightened levels of youth presence (OPEN Rotterdam, 2025).

reference projects — *Schouwburgplein*
research by design

A2.

Introduce *the right to graffiti* through leaving graffiti untouched and providing the youth with the necessary canvas.

Public space is rarely designed to cater to the needs of adolescents (Valentine, 1996). Therefore, the youth often appropriate public space in order to demarcate their territory. One of the ways in which this can happen is through graffiti, which can coincide with the expression of their identity. This expression of identity is important, as youth otherwise have limited formal influence at the macro level through participation, referenda and elections (Van Lieshout & Aarts, 2008).

literature — *Ferrel, 1995; Campos, 2015*
reference projects — *Superkilen (p. 114)*

A3.

Design multiple micro-territories in public spaces, accommodating the movement of different youth groups in public spaces.

Hanging out is rarely a static activity; youth use larger parts of a square, street, or even entire neighbourhoods. It is therefore important that public space is able to accommodate this behaviour, as the appropriation of spaces which do not support loitering can otherwise be perceived as a nuisance.

literature — *Gray & Manning, 2022*
ethnography — *enclosed open space (p. 66)*
reference projects — *Schouwburgplein (p. 120) - Zuidplein (p. 124)*

interact with others

IO1.

Remove any unnecessary barriers which prevent interaction with other users of public space.

The importance of interaction in adolescent development cannot be overstated. It is therefore imperative that the youth are provided with opportunities for interaction, rather than having these obstructed. Barriers can be found in multiple forms and shapes, ranging from harsh physical barriers, such as fenced-off spaces, to more subtle and decorative barriers, such as vegetation. When applying this strategic action, it is important to relate it to strategic action ES1, as barriers are not always unnecessary, but sometimes also needed to create an environment in which other users of public space can also feel comfortable.

literature — *Lieberg, 1995*
geographical analysis — *retreat and interaction (p. 106)*

IO2.

Introduce secondary walking routes alongside the micro-territories for the youth.

When designing places of interaction, it is important to create multiple micro-territories, as outlined in strategic action A3. However, for these micro-territories to function as places of interaction, the element of interaction has to be present. To achieve this, other users of public space should be incorporated into the spatial design, for instance through the establishment of secondary routes and the stimulation of their use.

geographical analysis — *human behaviour (p. 108)*
research by design



EF1.

Design places for youth in the vicinity of fixed community figures.

Places like youth centre The Mall and De Vleugel, where drop-in evenings for the youth are also organised, but also more informal fixed community figures, such as Aram and Bakkerij Enes, form important meeting places for the youth of Voorhof. The people here do not only offer surveillance without exerting authority, they can also be considered role models to the youth. Places like this should be supported and the gathering of youth here should not be obstructed through i.e. bans on gathering.

ethnography — *presence of an informal guardian (p. 70)*, *lived experience (p. 72)*

EF2.

Include the fixed community figures in the organisation of activities for the youth in the neighbourhood.

If you truly want to do something for the youth, you should organise more activities, such as football tournaments or do something with Aram. Many of the kids want to become a hairdresser now.

Activities organised by the youth workers have proven to be popular among the youth. When asked what they feel is lacking in the neighbourhood, the response is almost always “more football fields”, but mentions of more evenings at the youth centre soon follows. Older youth also recognize the potential of involving these fixed community figures in the organisation of activities, as the fulfil an important social role in the neighbourhood.

ethnography — *presence of an informal guardian (p. 70)*

EF3.

Extend the presence of versatile, informal guardians throughout the entire neighbourhood.

As the presence of *straatcoaches* has been proven effective in different cities (Loef et al., 2012), and the aim of the design is to facilitate a more even distribution of the youth across the neighbourhood, informal guardians should likewise be spread throughout the area.

ethnography — *presence of an informal guardian (p. 70)*

EF4.

Ensure diverse representation of possible role models throughout the neighbourhood.

A glance at the map of Voorhof quickly reveals the many streets named after native Dutch writers. While the demographic of the Netherlands has changed significantly, street names have not. A more diverse representation of possible role models, for instance through street naming, can contribute to distributive justice (Alderman & Inwood, 2013).

literature — *Alderman & Inwood, 2013*

It has been established that the presence of youth groups can generate feelings of unsafety. These feelings are amplified in areas with a high concentration of residents with a non-Western background (Liedelmeijer et al., 2009). These feelings are most common among young and elderly women, with young women constituting a large part of the demographic of Voorhof, 28% of women being between the ages of 20 to 29 (Gemeente Delft, 2025). In order to ensure a just environment, it is necessary to acknowledge these perceptions of unsafety and mitigate possible situations of tension.

Spatial measures which can improve the perceived safety of the area among young women include improved accessibility, the presence of clear sightlines and improved lighting (Schram et al., 2024). While accessibility may not initially appear to be related to perceived safety, the availability of multiple routes in and out of an area is important. It reduces the sense of enclosure and provides users with the opportunity to leave the area in cases of perceived unsafe conditions. This can be related and should be combined with the presence of clear sightlines, offering the users with the opportunity to keep sight on where they are going as well as their surroundings. The presence of sightlines also enhances the amount of natural surveillance, it provides young women with the opportunity to be seen.

These measures should be fortified through the presence of appropriate levels of lighting at night. This lighting should not merely illuminate the walking paths, but also the surrounding environment, as women tend to perceive public space differently from men and are often more focussed on their surroundings (Chaney et al., 2024).

In addition to the perceived unsafety around youth groups, another recurring complaint concerns noise pollution (CCV, 2008). Residents of Voorhof frequently notice this in the vicinity of high-rise apartment building. As this thesis aims to refrain from exclusionary measures such as hostile architecture and bans on gathering, solutions should be sought through the design of the environment. For example, the implementation of design measures such as green facades (Azkorra et al., 2015) or inclined gallery or balcony ceilings (Hossam el Dien & Woloszyn, 2004) can reduce noise exposure on building facades.

ES1.

Ensure secondary walking routes through public spaces designed for youth groups.

Public space is, as its name suggests, public. Youth groups should therefore not be excluded from squares and streets; however, at the same time, other users of public space should not be discourages from using public space. Therefore, secondary walking routes can provide others with the opportunity to avoid youth groups, without limiting their mobility.

literature *Schram et al., 2024*

ES2.

Preserve important sightlines trough open spaces.

To retain feelings of safety while moving through an area, it is important to be able to see the destination and to remain visible to others. Sightlines should therefore be kept free from obstacles, but also obstacles in the direct environment should be limited. Dense vegetation, in particular, can be experienced as unsafe; therefore, the placement of trees and shrubs should be carefully considered.

literature *Schram et al., 2024*

ES3.

Ensure clear overviews of public space in the dark through different lighting sources.

As women experience public space differently from men, especially at night, public space should be adapted to these needs. This requires the provision of lighting sources that illuminate the direct environment. To ensure visibility of the environment from multiple directions, lighting sources should be diverse in their shape, size and location.

literature *Chaney et al., 2024*

ES4.

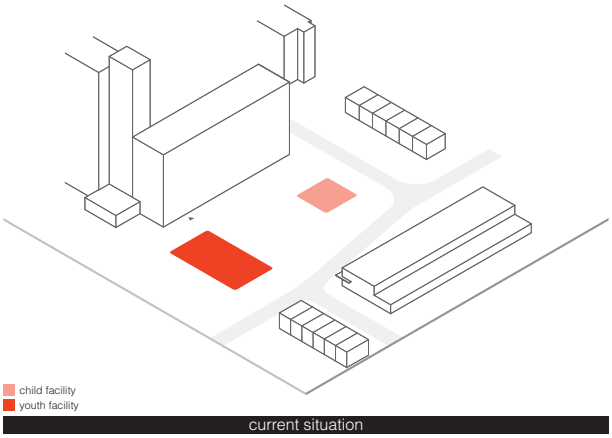
Use positive design measures to lessen possible noise pollution from youth groups.

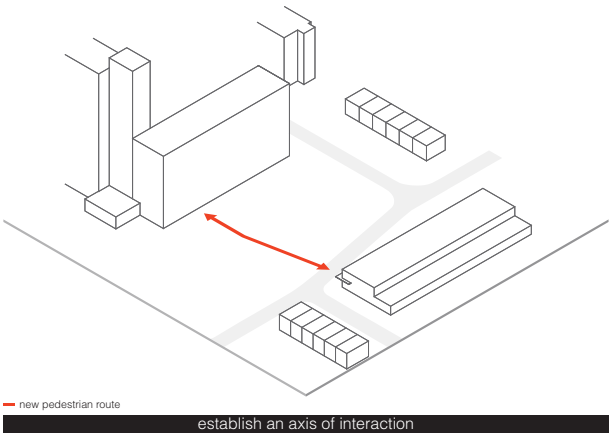
Positive design measures, such as green facades and inclined gallery or balcony ceilings, can contributed to reduced noise exposure on building facades without excluding youth from certain areas of public space. In this way, youth can appropriate public space without others experiencing possible noise pollution.

literature *Azkorra et al., 2015; Hossam el Dien & Woloszyn, 2004*

ethnography

design task





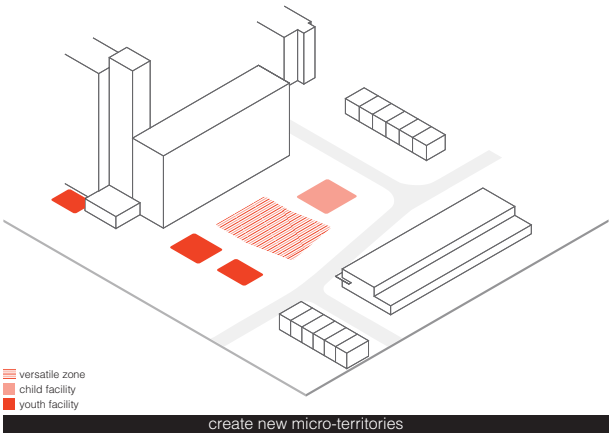


fig. 7.2: schematic of proposed design

PROJECT SITE 1 - RETREAT AND INTERACTION

Through geographical analysis, the different spatial characteristics of the selected projects have been identified. The first selected project site is characterised by a clear distinction in places of retreat and places of interaction. Therefore, the goal for the development of this site is to make use of the potential of the location to enable the youth to interact with other users of public space, thereby testing their behaviour, but also being able to withdraw from public space to a place of retreat in the direct vicinity.

In order to accomplish this, the existing situation is first analysed, identifying two facilities within the available public space, subdivided into facilities mostly catering to adolescents and younger children. In order to realise places of interaction, opportunities for interaction must first exist. Therefore, a new axis of interaction is introduced, based on an existing desire path, often used by residents of the apartment building to access the supermarket. Along this axis of interaction, different micro-territories are created to be appropriated by youth. In addition to these micro-territories, a place of retreat is created by taking advantage of the previously identified opportunities for retreat.

The facility for younger children remains in existence, as the presence of youth should not exclude other users of public space. To smoothen the transition and further facilitate the shifting between interaction and retreat, a transition zone is established, enabling the coexistence of youth and other users of public space. At the same time, it is important to avoid the development of an overly designed site, as was observed in the studied reference project Superkilen. As all elements of Superkilen were already appropriated by other groups, little room was left for appropriation by youth.

HOW CAN URBAN ENVIRONMENTS ACCOMMODATE PLACES OF INTERACTION AND PLACES OF RETREAT WITHIN THE SAME SPATIAL CONTEXT?

before

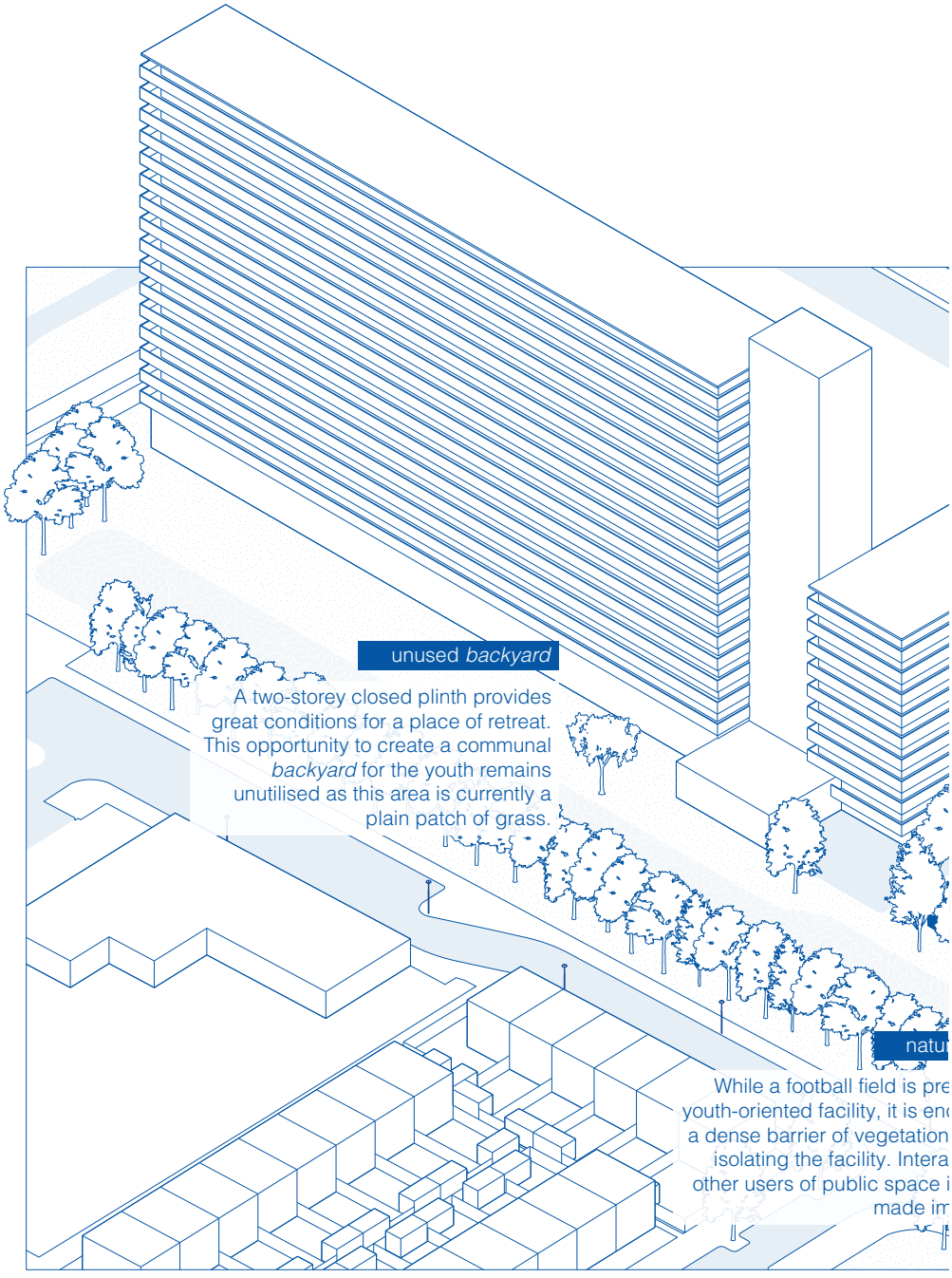
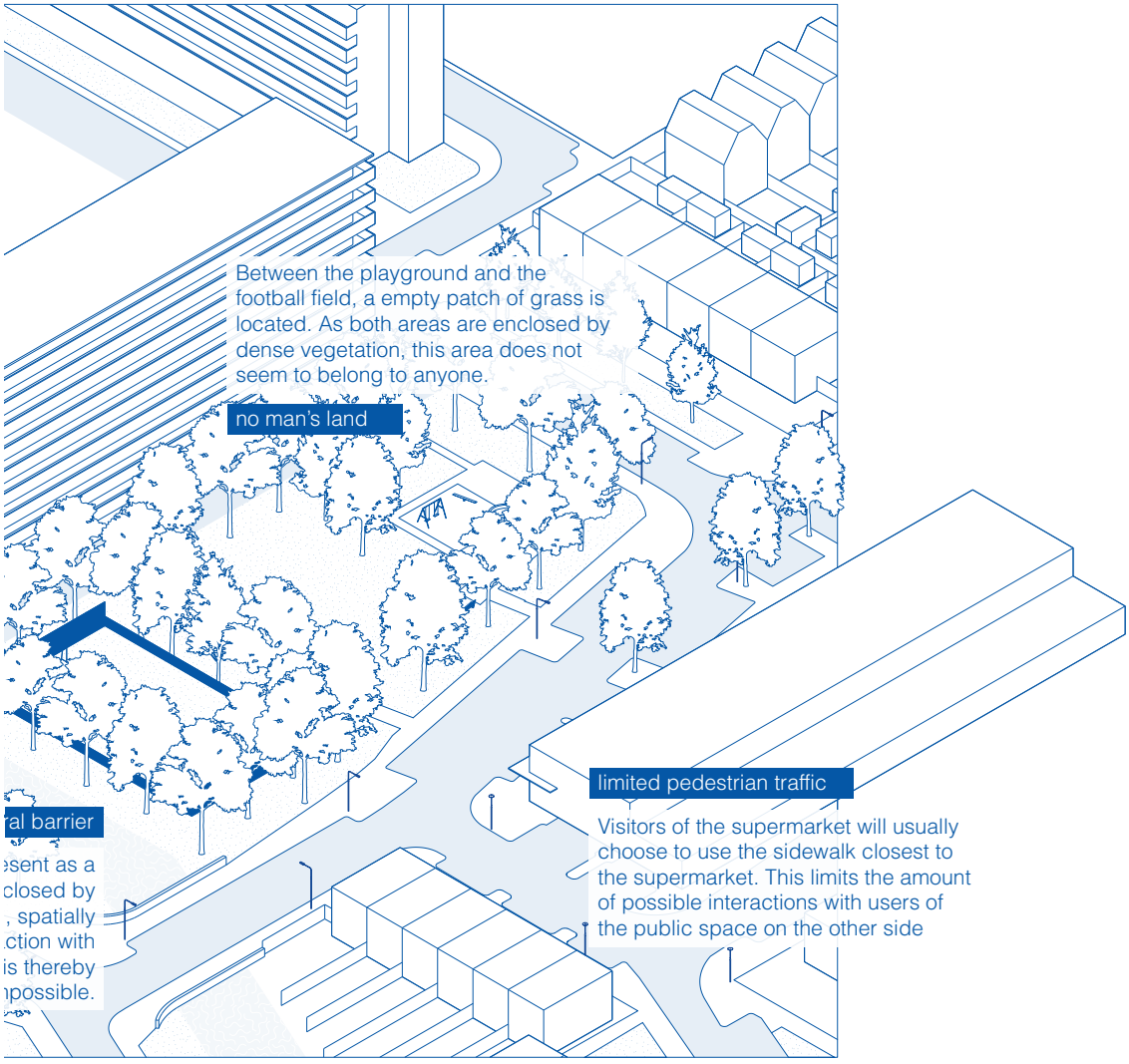


fig. 7.3: isometric view of current situation


Between the playground and the football field, a empty patch of grass is located. As both areas are enclosed by dense vegetation, this area does not seem to belong to anyone.
no man's land
limited pedestrian traffic
Visitors of the supermarket will usually choose to use the sidewalk closest to the supermarket. This limits the amount of possible interactions with users of the public space on the other side
al barrier
esent as a closed by , spatially ction with is thereby npossible.

after

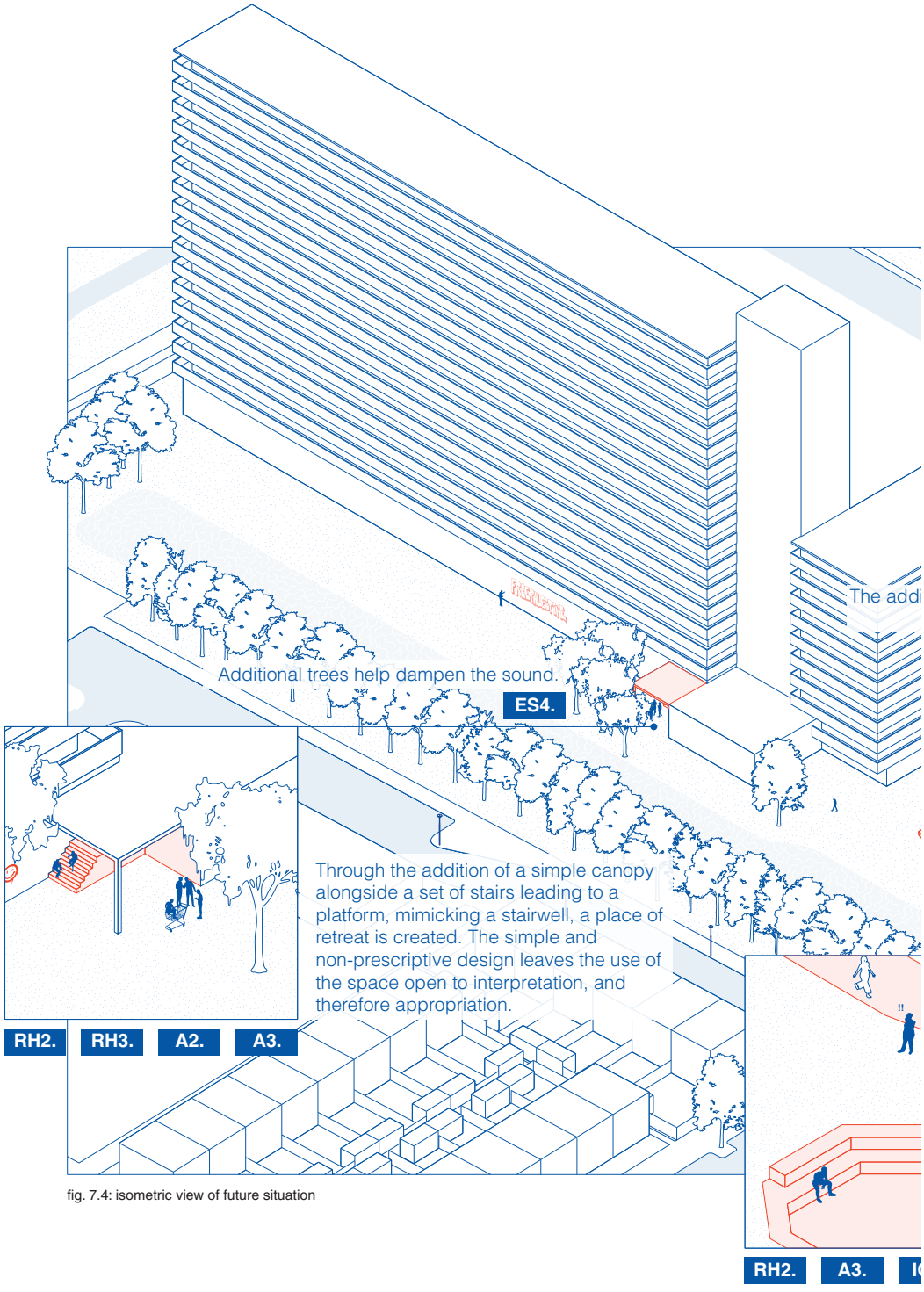


fig. 7.4: isometric view of future situation

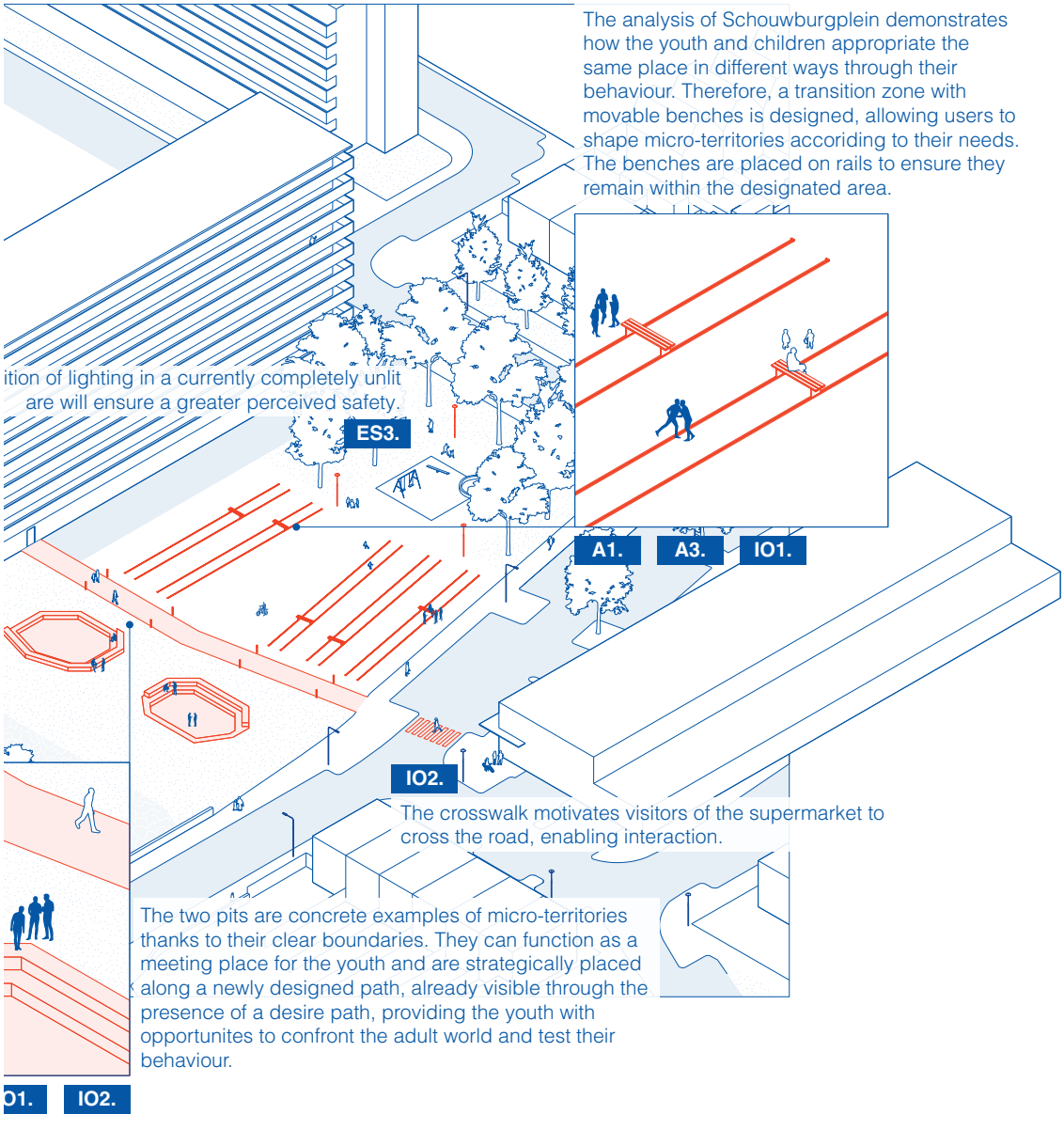

The analysis of Schouwburgplein demonstrates how the youth and children appropriate the same place in different ways through their behaviour. Therefore, a transition zone with movable benches is designed, allowing users to shape micro-territories accoriding to their needs. The benches are placed on rails to ensure they remain within the designated area.
ition of lighting in a currently completely unlit are will ensure a greater perceived safety.
ES3.
A1.
A3.
IO1.
IO2.
The crosswalk motivates visitors of the supermarket to cross the road, enabling interaction.
The two pits are concrete examples of micro-territories thanks to their clear boundaries. They can function as a meeting place for the youth and are strategically placed along a newly designed path, already visible through the presence of a desire path, providing the youth with opportunites to confront the adult world and test their behaviour.
O1.
IO2.



fig. 7.5: current situation

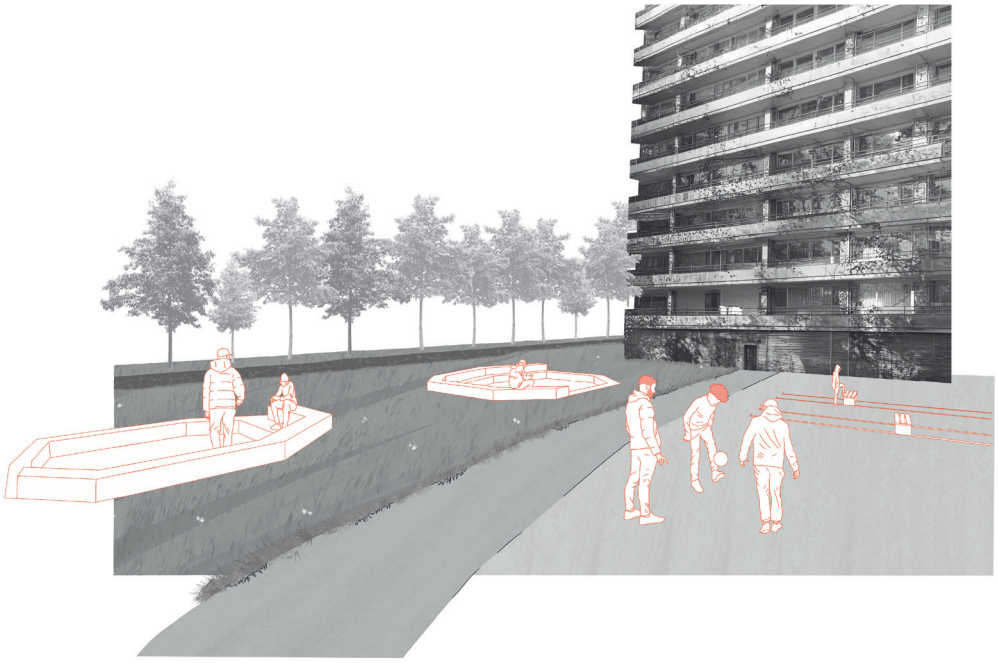


fig. 7.6: future situation



fig. 7.7: current situation

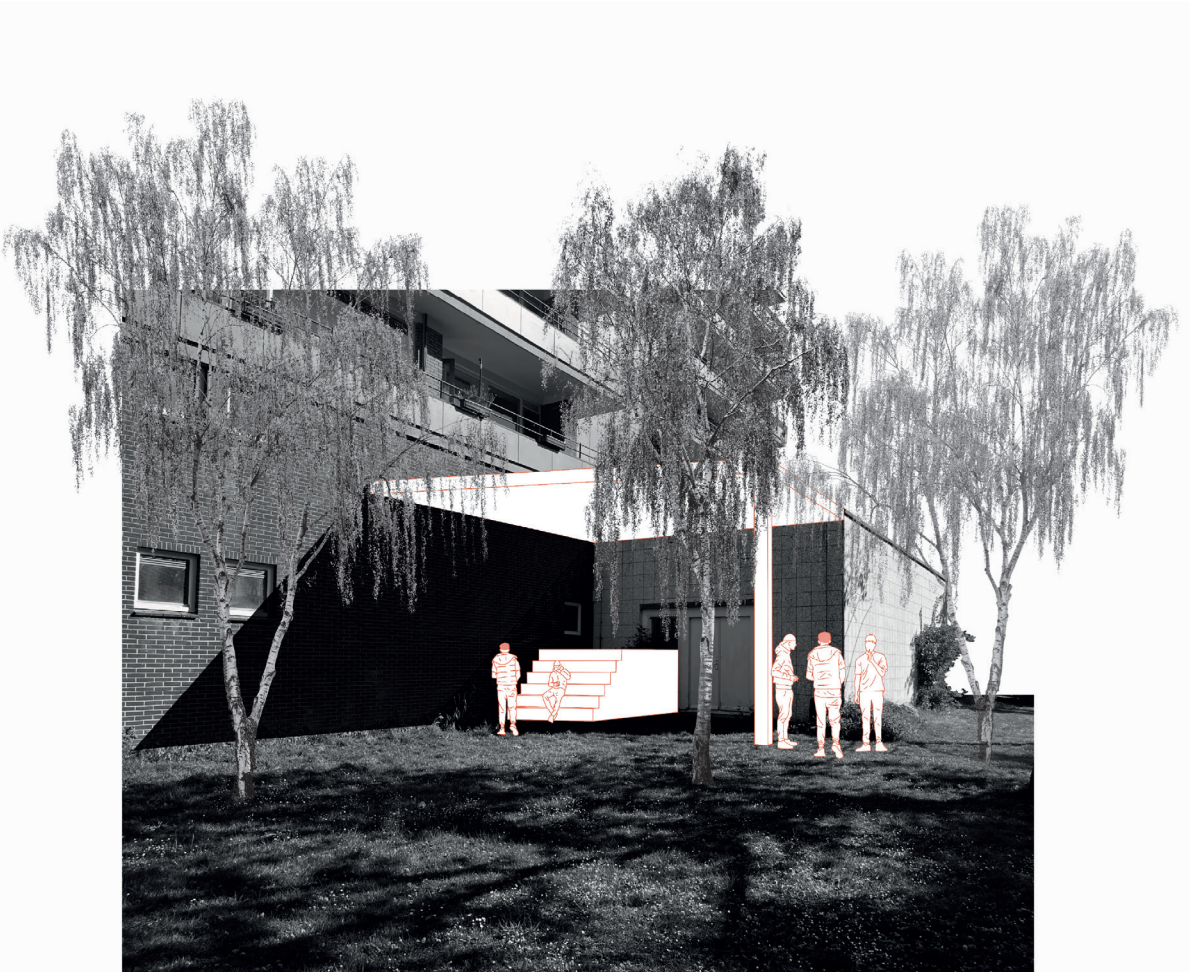
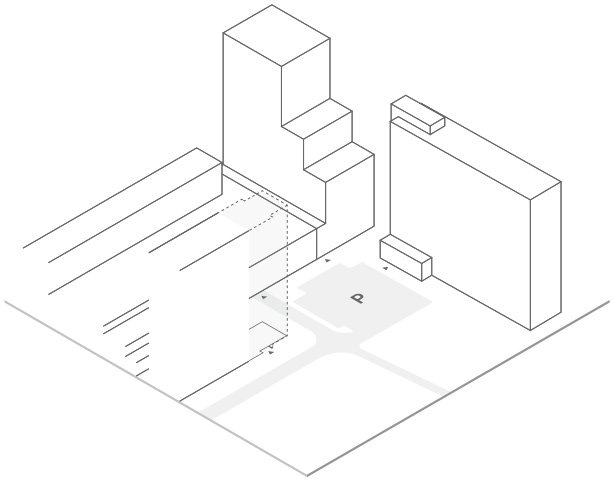
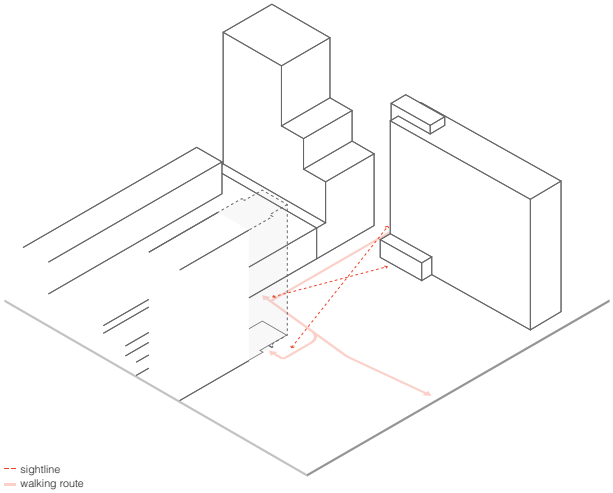


fig. 7.8: future situation

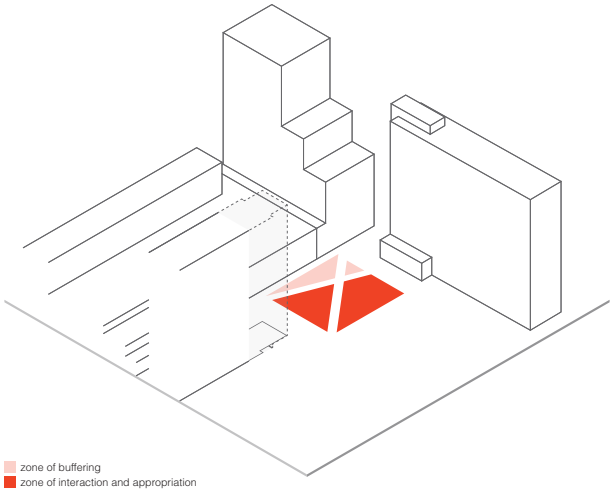
design task



current situation



define sightlines and walking routes



create different zones

fig. 7.9: schematic of proposed design

PROJECT SITE 2 - LIVED SPACE VS. PERCEIVED SPACE

Appropriation of the city is a central theme in this thesis. According to Lefebvre (1996), appropriation should be central to the development of cities. However, appropriation, or lived space, affects the way in which the environment is experienced, the perceived space (Lefebvre, 1991). In this context, the presence of youth groups, it is known to influence the perceived space, the perceptions of safety, negatively (Liedelmeijer et al., 2009), especially among the demography of this selected project site, which contains many young women.

Therefore, it is necessary to adapt the design of public space in a way that allows for appropriation by youth groups while ensuring that perceptions of safety are maintained or improved. To achieve this, the sightlines and accessibility of the area are assessed, as they can play an integral role in fostering feelings of safety (Schram et al., 2024). These sightlines and walking routes form the basis for the creation of different zones.

These zones can be subdivided into two categories, zones of interaction and appropriation, contributing to lived space, and zones of buffering, contributing to perceived space. The buffer zones are established to ensure greater accessibility through the addition of secondary walking paths that do not border zones of interaction and appropriation. Zones of appropriation do not specifically cater to youth, and can be used by a broader demographic, further supporting the coexistence of different user groups, as is also visible at Schouwburgplein, where the same environment can be appropriated by different groups.

HOW CAN THE DESIGN OF PUBLIC SPACE ENSURE THE NEEDS AND WISHES OF DIFFERENT COMMUNITIES ARE MET?

before

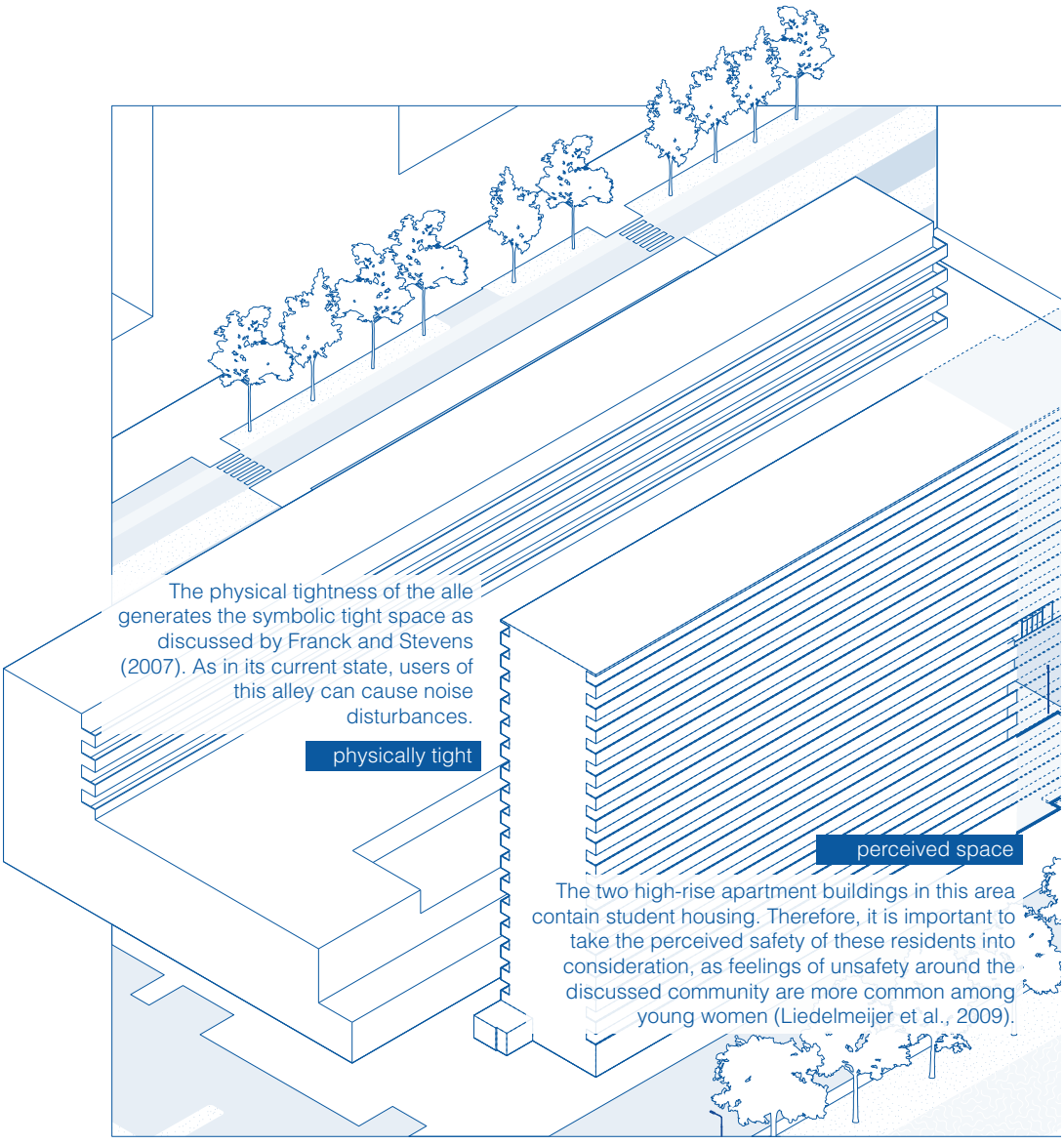
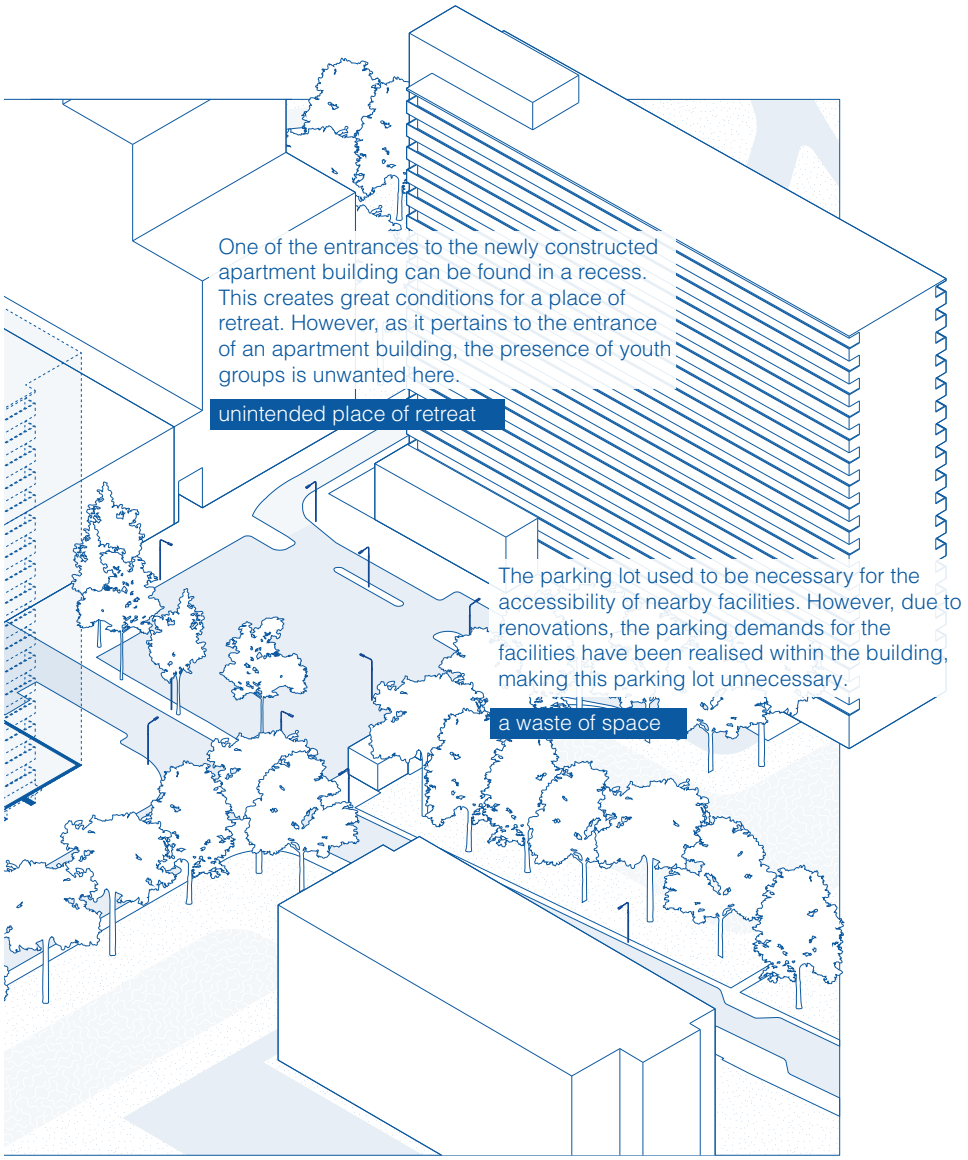


fig. 7.10: isometric view of current situation


One of the entrances to the newly constructed apartment building can be found in a recess. This creates great conditions for a place of retreat. However, as it pertains to the entrance of an apartment building, the presence of youth groups is unwanted here.
unintended place of retreat
The parking lot used to be necessary for the accessibility of nearby facilities. However, due to renovations, the parking demands for the facilities have been realised within the building, making this parking lot unnecessary.
a waste of space

after

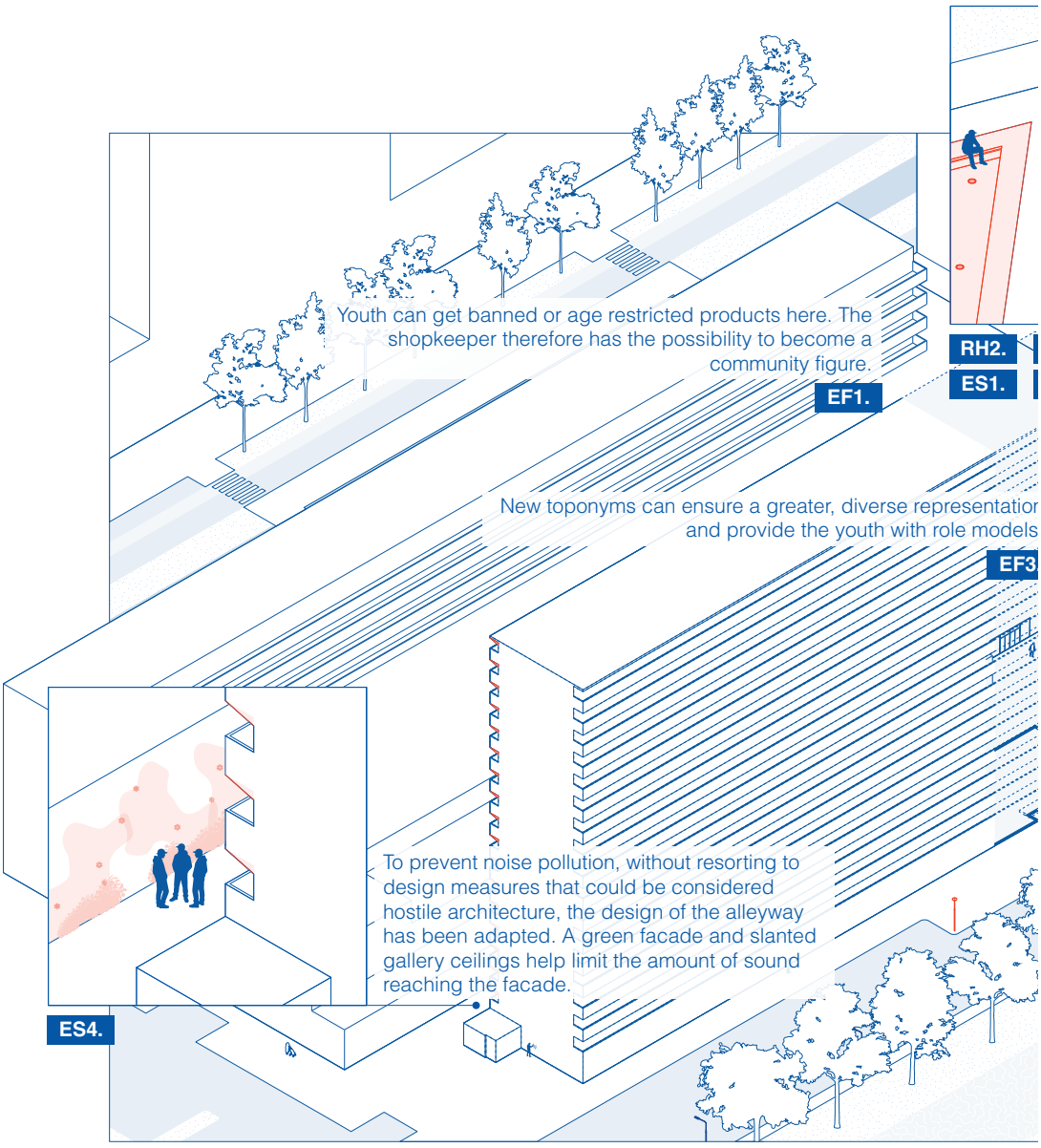
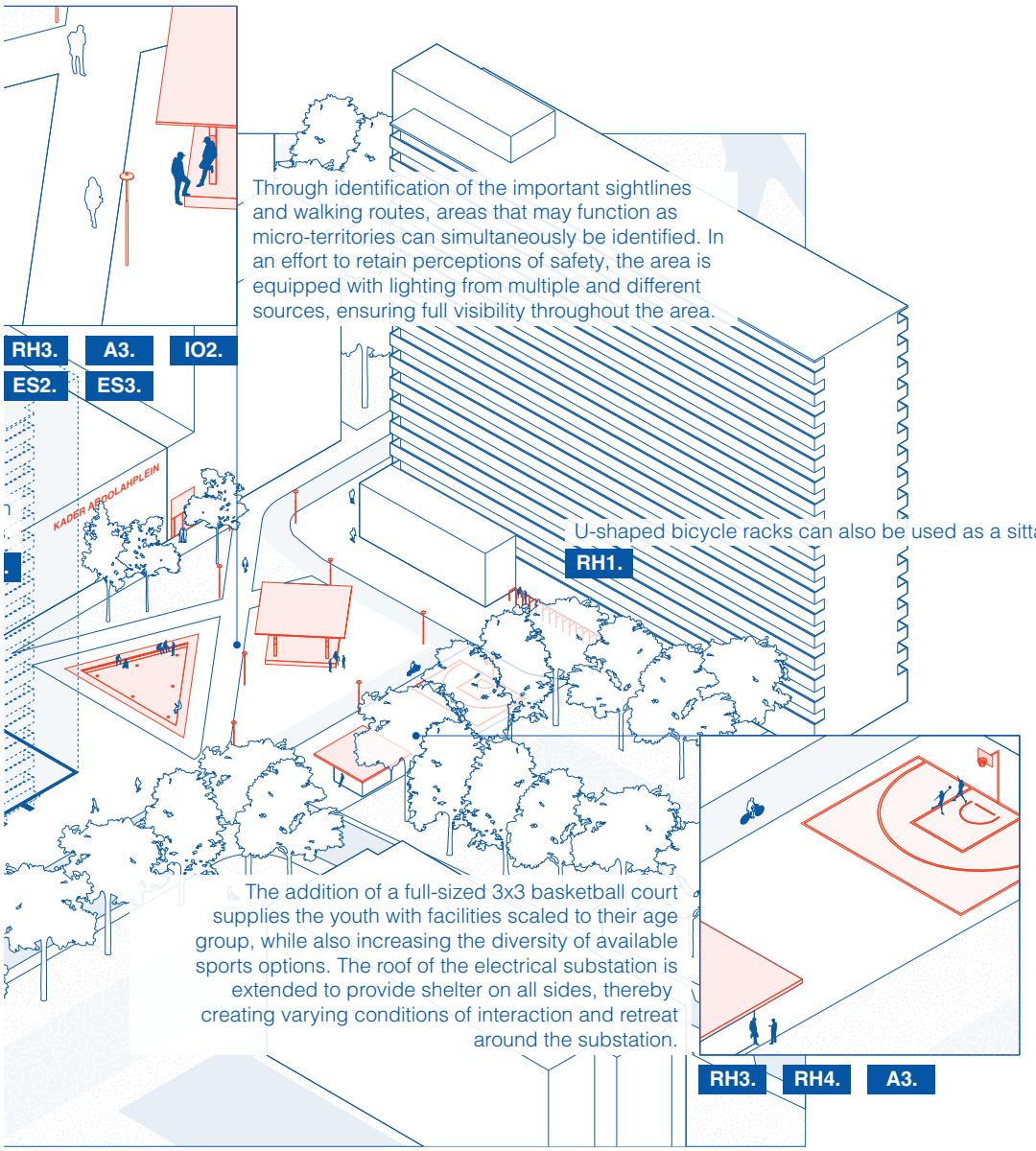


fig. 7.11: isometric view of future situation



Through identification of the important sightlines and walking routes, areas that may function as micro-territories can simultaneously be identified. In an effort to retain perceptions of safety, the area is equipped with lighting from multiple and different sources, ensuring full visibility throughout the area.

U-shaped bicycle racks can also be used as a sittable object.

The addition of a full-sized 3x3 basketball court supplies the youth with facilities scaled to their age group, while also increasing the diversity of available sports options. The roof of the electrical substation is extended to provide shelter on all sides, thereby creating varying conditions of interaction and retreat around the substation.



fig. 7.12: current situation

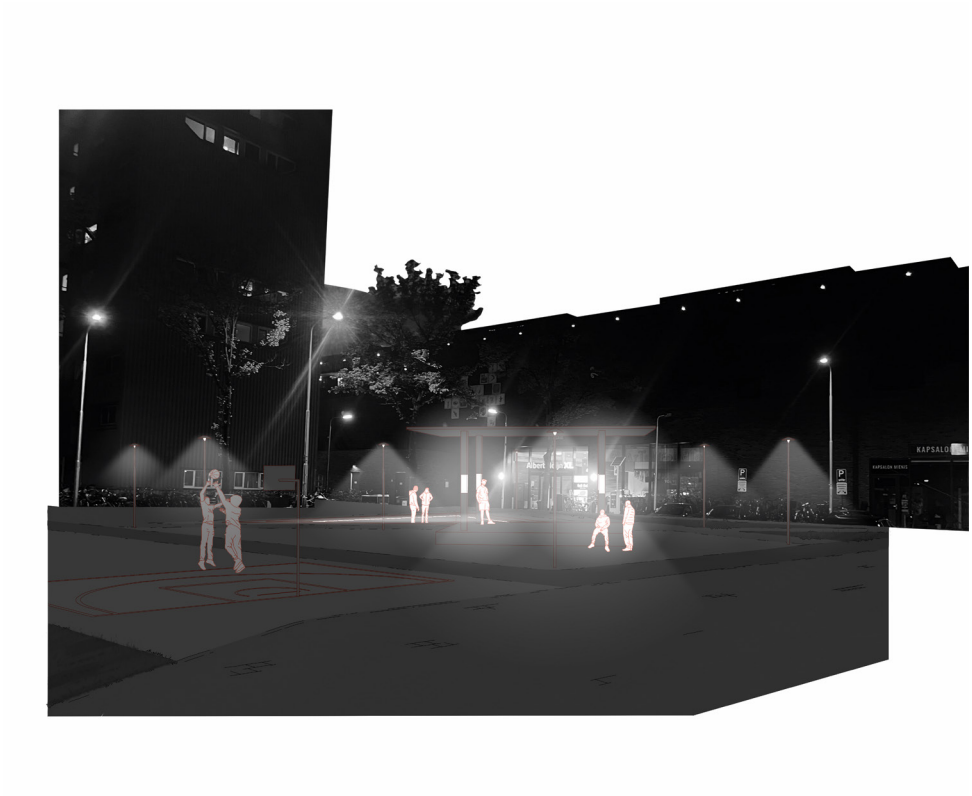
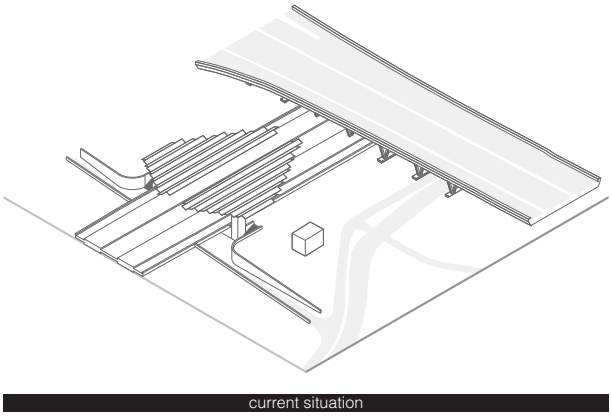
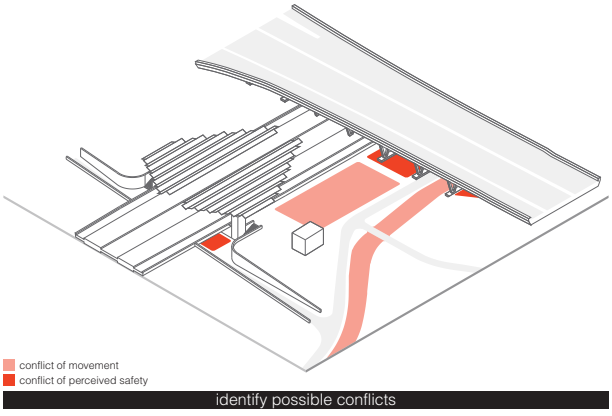


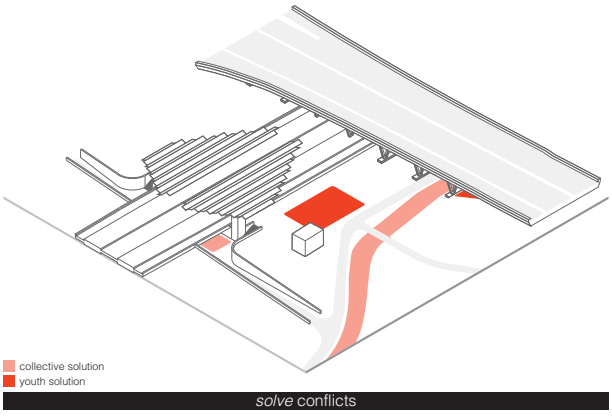
fig. 7.13: future situation



current situation



identify possible conflicts



solve conflicts

fig. 7.14: schematic of proposed design

PROJECT SITE 3 - THE RIGHT TO HANG

The final project site is used as a verification method. Youth groups are often stigmatized, stereotyped, and problematised by political discourse and media (De Koning, 2016). This design focuses on these stereotypical behavioural traits associated with youth groups and provides them with a place in the environment. As design is used as an evaluation method, this proposal tests whether the youth prefer an environment that supports this stereotypical forms of behaviour.

In order to create an environment in which the stereotypical wishes and behaviours of the youth are fully accommodated, the potential areas of conflict are first identified. In general, these can be subdivided into conflicts of safety, present in tunnels where perceived levels of unsafety are generally heightened (Janssen & Goorden, 2022), and conflicts of movement, where the presence of youth may interfere with the conventional flows of traffic. In both cases, the proposed resolutions consist of collective solutions, focussing on the coexistence of different user groups, and youth-oriented solution, specifically catering to the needs of the youth.

Making use of this design's function as verification method, the design also includes a football field, as youth almost exclusively mention football fields when asked about their preferences in public space. In doing so, the design tests whether the youth would still select football fields as their preferred option when presented with different choices.

The appropriation of pockets, observed around the underpasses at Zuidplein, is supported through the redevelopment of the underpasses into areas suitable for youth appropriation. Similarly, the speeding fatbikes around Zuidplein, forming a contrast between the area which is otherwise used as an area of waiting, are represented in the redevelopment of Delft Campus station area.

WHAT IF PUBLIC SPACE WOULD BE DESIGNED TO FULLY ACCOMMODATE THE YOUTH AND THEIR BEHAVIOUR?

before

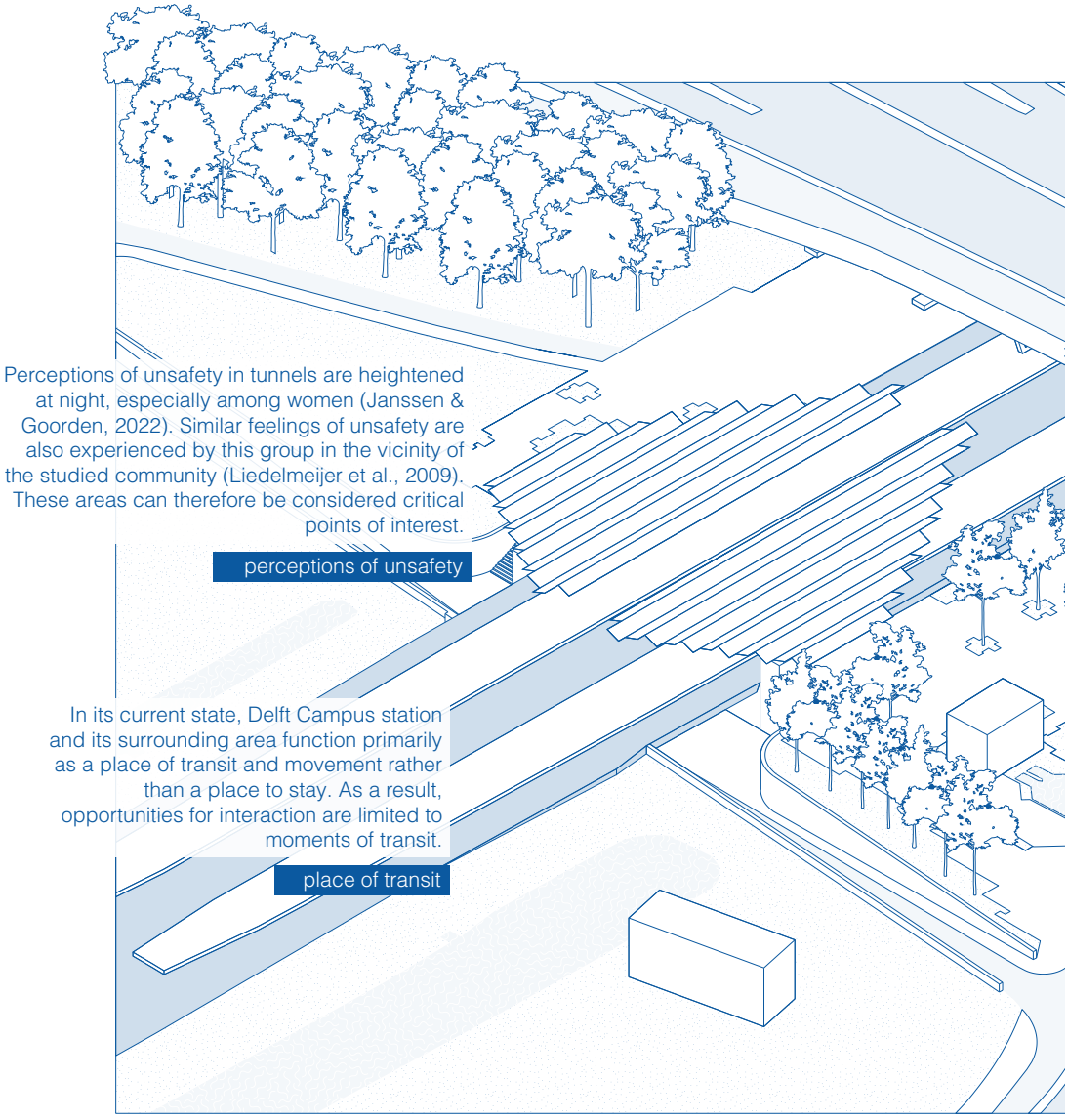
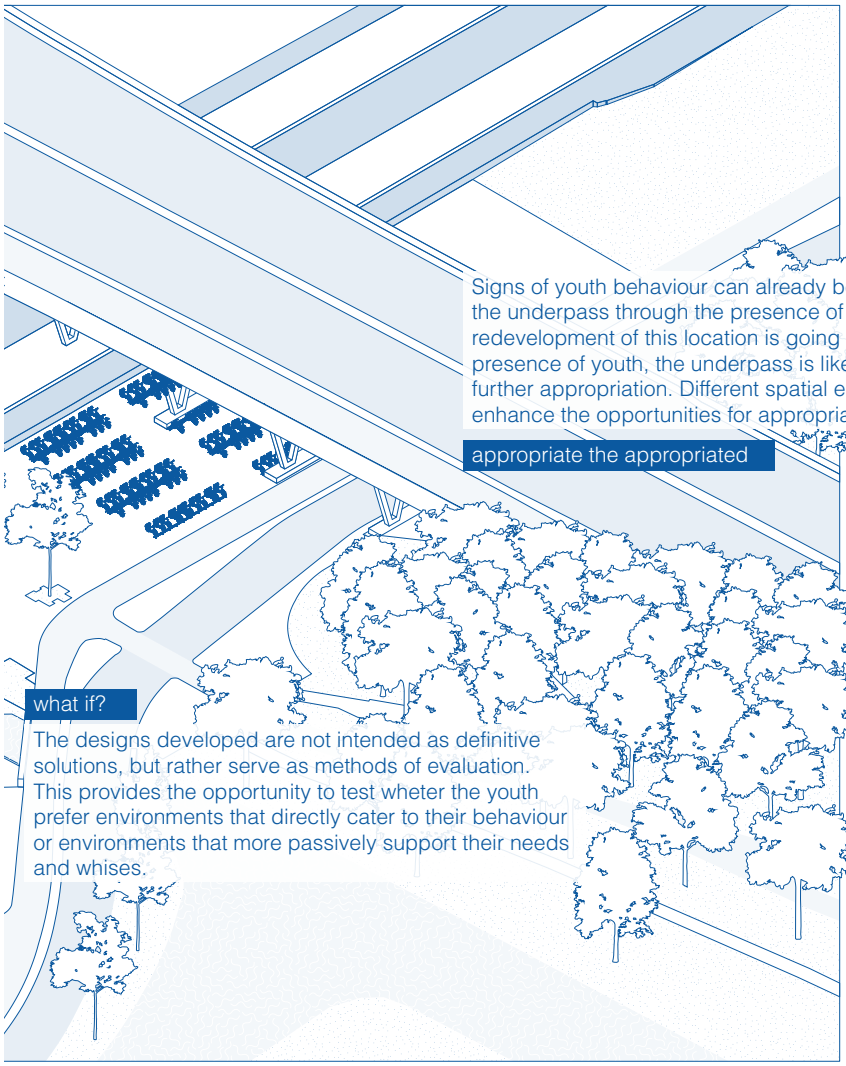


fig. 7.15: isometric view of current situation



Signs of youth behaviour can already be observed within the underpass through the presence of graffiti. If the redevelopment of this location is going to intensify the presence of youth, the underpass is likely to undergo further appropriation. Different spatial elements can enhance the opportunities for appropriation.

appropriate the appropriated

what if?

The designs developed are not intended as definitive solutions, but rather serve as methods of evaluation. This provides the opportunity to test wheter the youth prefer environments that directly cater to their behaviour or environments that more passively support their needs and whises.

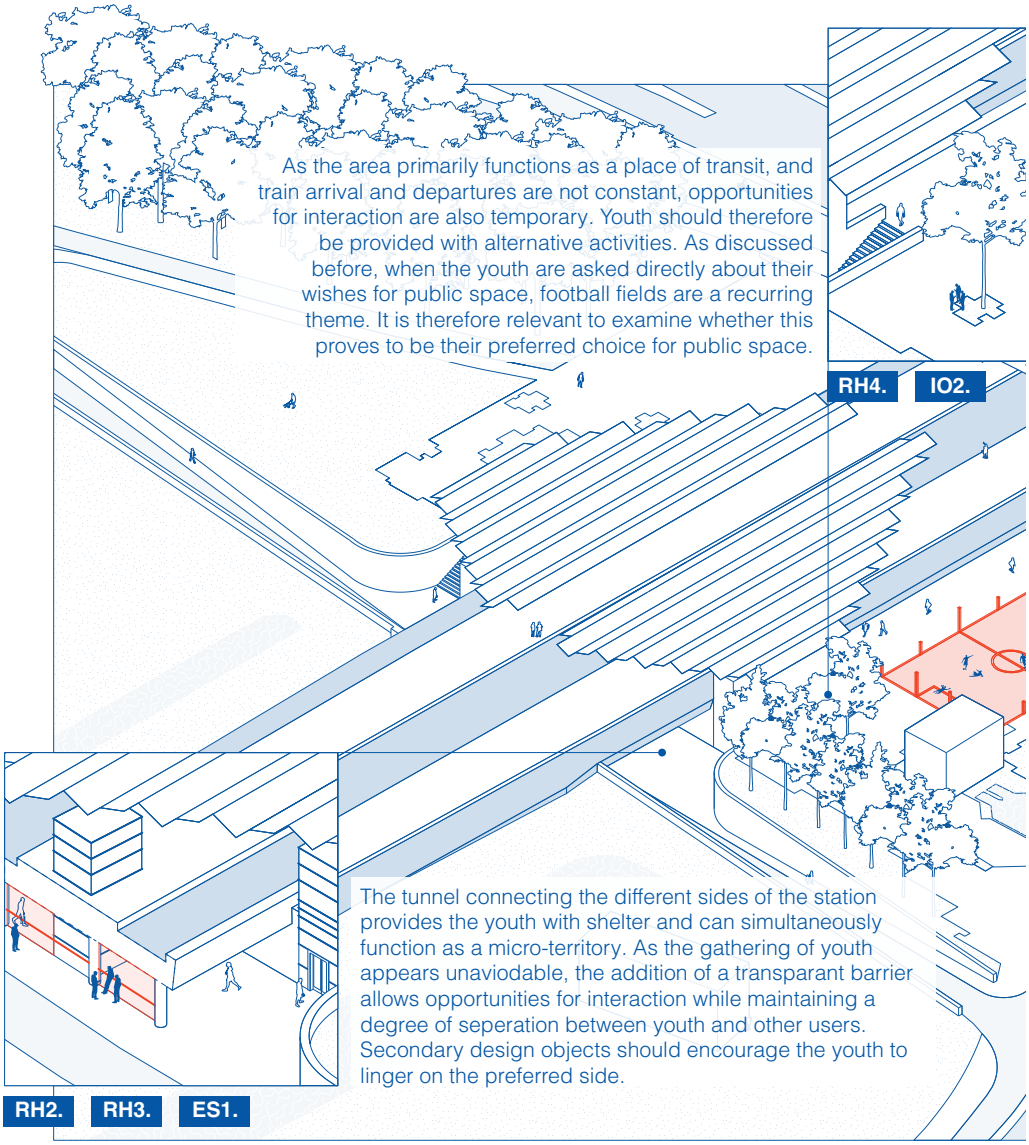
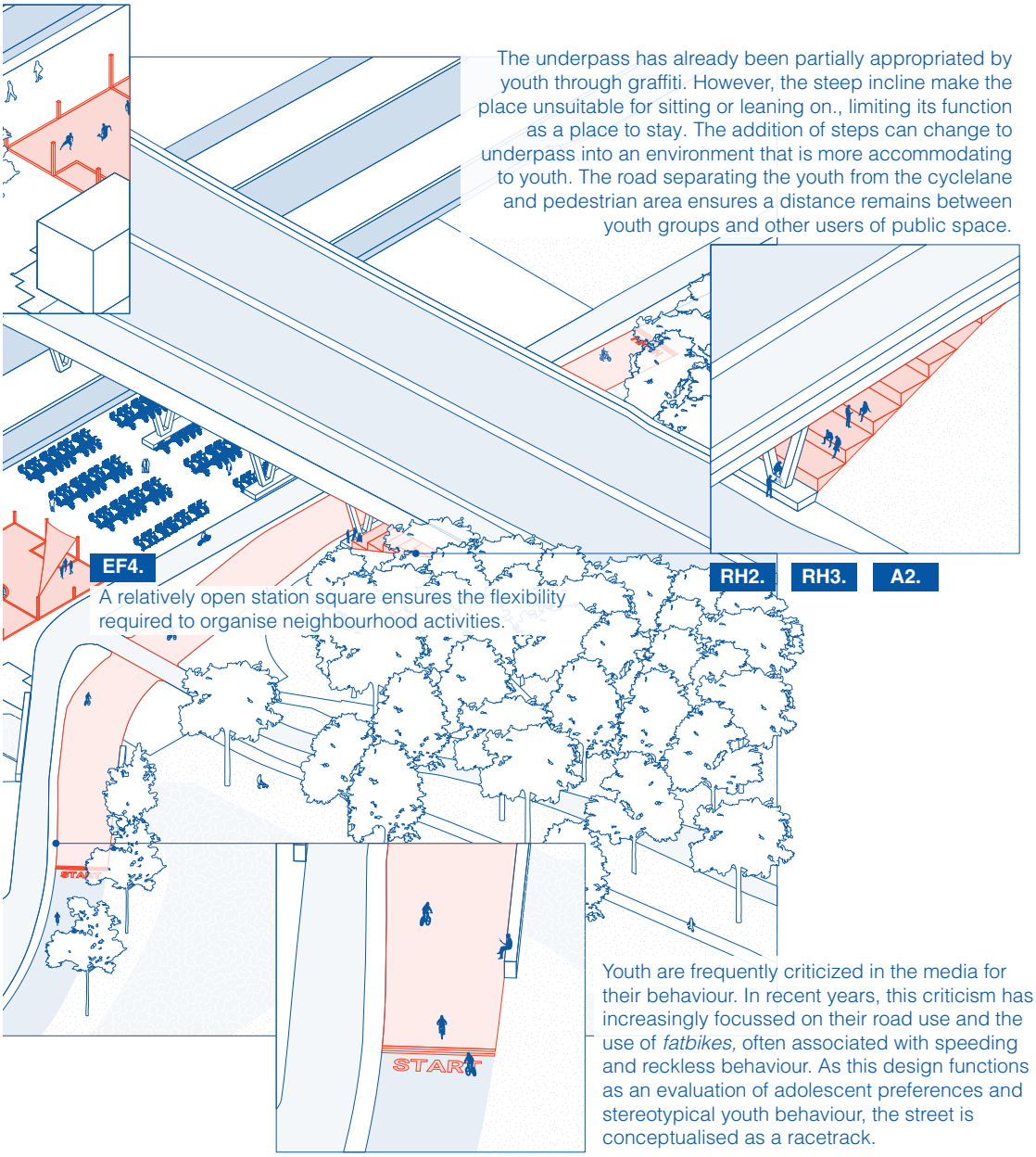


fig. 7.16: isometric view of future situation



The underpass has already been partially appropriated by youth through graffiti. However, the steep incline make the place unsuitable for sitting or leaning on., limiting its function as a place to stay. The addition of steps can change to underpass into an environment that is more accommodating to youth. The road separating the youth from the cyclelane and pedestrian area ensures a distance remains between youth groups and other users of public space.

RH2. **RH3.** **A2.**

EF4.

A relatively open station square ensures the flexibility required to organise neighbourhood activities.

Youth are frequently criticized in the media for their behaviour. In recent years, this criticism has increasingly focussed on their road use and the use of *fatbikes*, often associated with speeding and reckless behaviour. As this design functions as an evaluation of adolescent preferences and stereotypical youth behaviour, the street is conceptualised as a racetrack.



fig. 7.17: current situation

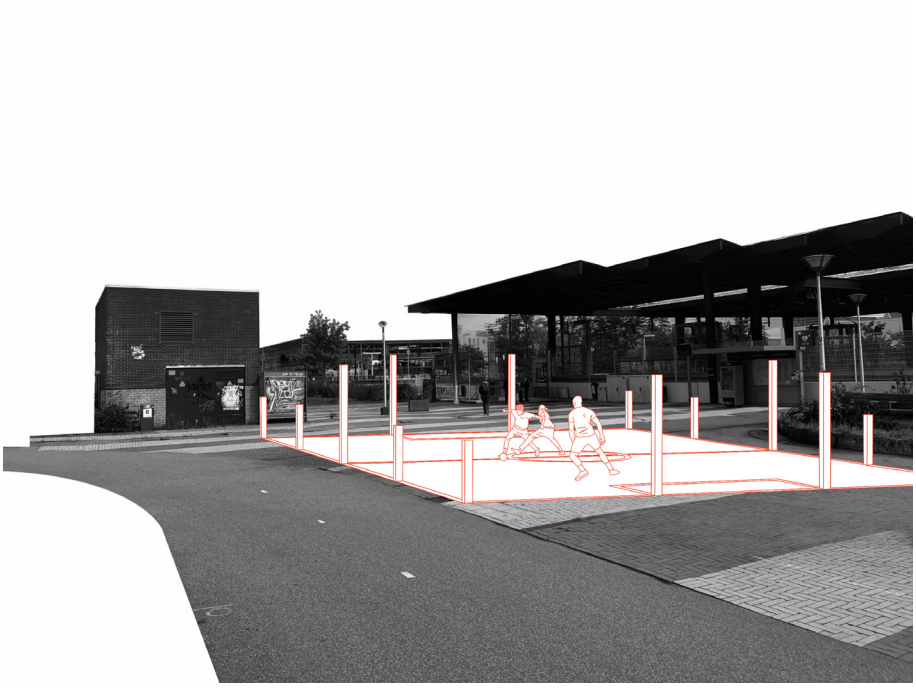


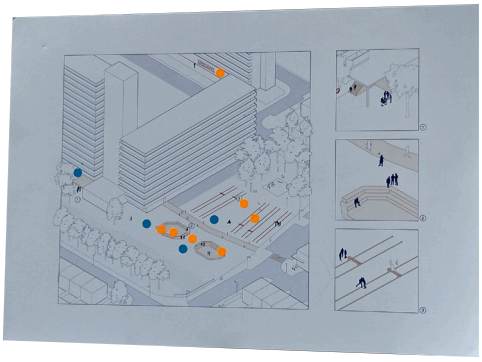
fig. 7.18: future situation



fig. 7.19: current situation



fig. 7.20: future situation



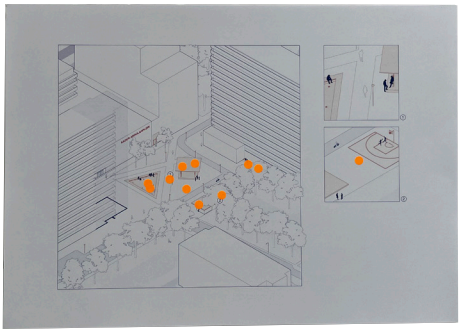




fig. 7.21: evaluation results

EVALUATION OF THE DESIGN

The research conducted in this thesis has led to the development of a set of strategic actions concerning various socio-spatial elements within the neighbourhood. Ultimately, the goal of these strategic actions is to develop a strategy that adresses the needs of the youth, as well as the experienced nuisances. However, this goal is influenced by social concepts, such as interaction and appropriation, complicating the evaluation of hypothetical design proposals.

Within the social sciences, it is common to conduct an ex post, meaning after implementation, evaluation, as an ex ante, before implementation, evaluation is often criticised for being unreliable (Oliveira & Pinho, 2010). However, within a participatory action research framework, evaluation is an integral element of creating a reflective cycle that informs further research and design (Baum et al., 2006).

As the aim of this thesis is to develop a strategy addressing the needs of the youth, as well as the experienced nuisances, the evaluation of the design must reflect this dichotomy in objectives. Therefore, an ethnographic evaluation is used to determine the needs and wishes of the youth, while theoretical evaluation provides a greater insight into the possible changes in experienced nuisance.

The ethnographic evaluation was conducted with methods similar to those previously used to identify the whereabouts of the youth. By bringing printed versions of the design proposals, the youth were given the opportunity to indicate their preferences and dislikes using differently coloured stickers. Comments made during the evaluation were documented, giving greater insight into the motivations behind their choices.

The theoretical evaluation relies upon the theories and concepts identified in the theoretical framework. Through analysis of how the hypothetical design influences tight and loose urban spaces (Franck & Stevens, 2007) and how it can create places of interaction and places of retreat (Lieberg, 1995), the general influence that the presence of youth groups can have on their environment can be studied.

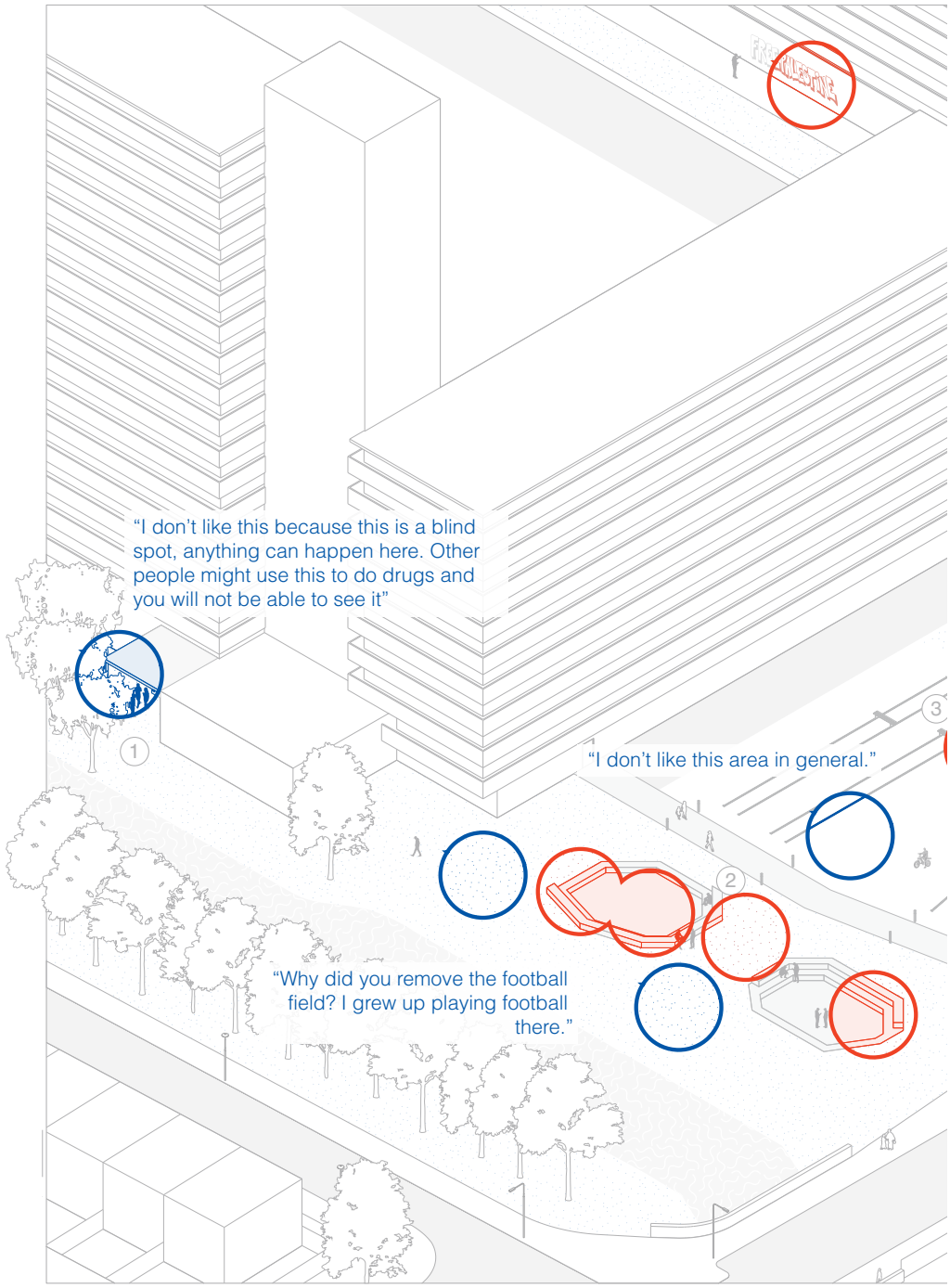
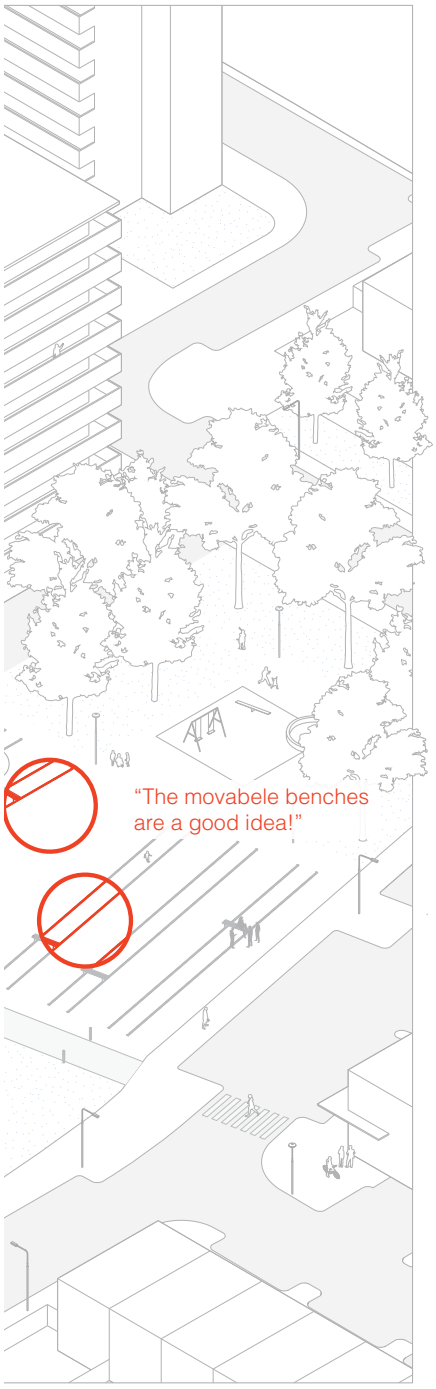
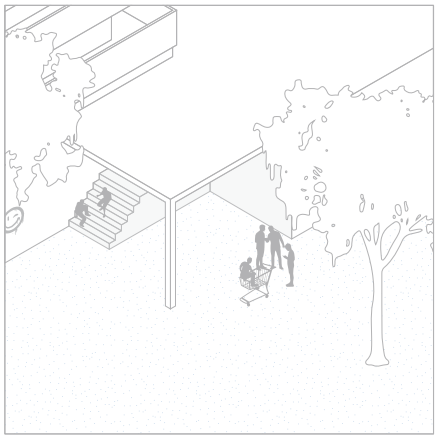
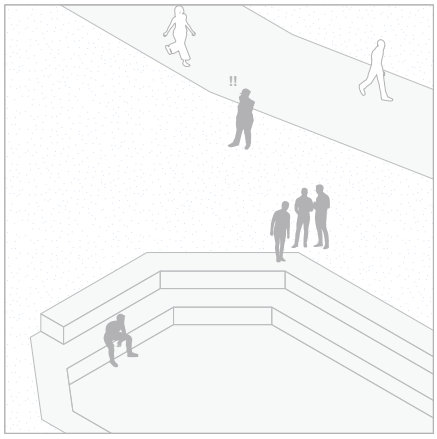
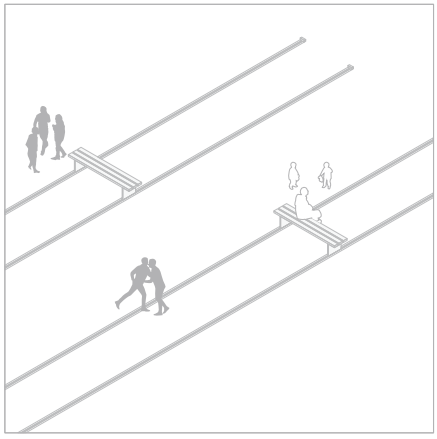


fig. 7.22: evaluation of project site 1





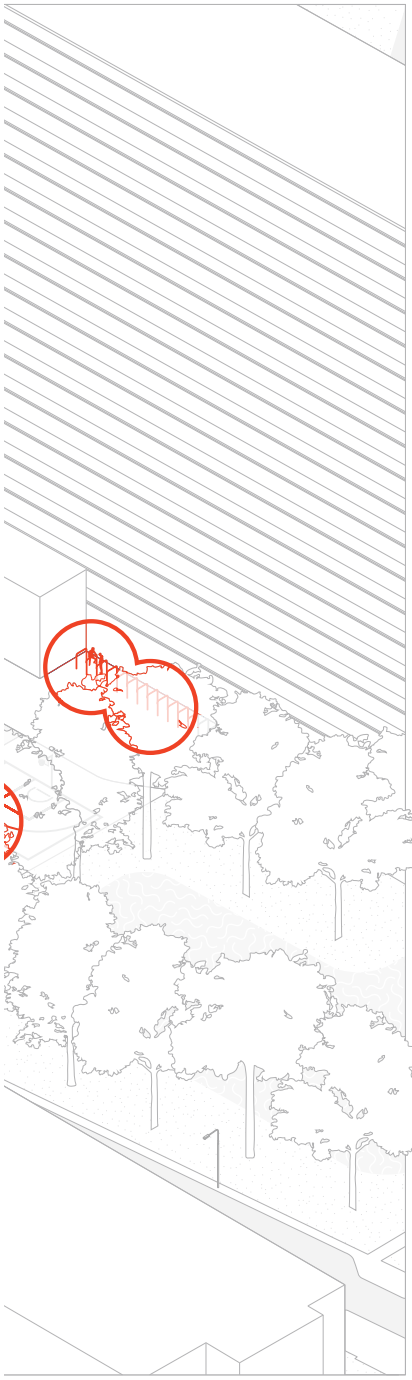




preference
dislike



fig. 7.23: evaluation of project site 2





1



2

"We don't have a basketball court in the neighbourhood yet."

preference
dislike

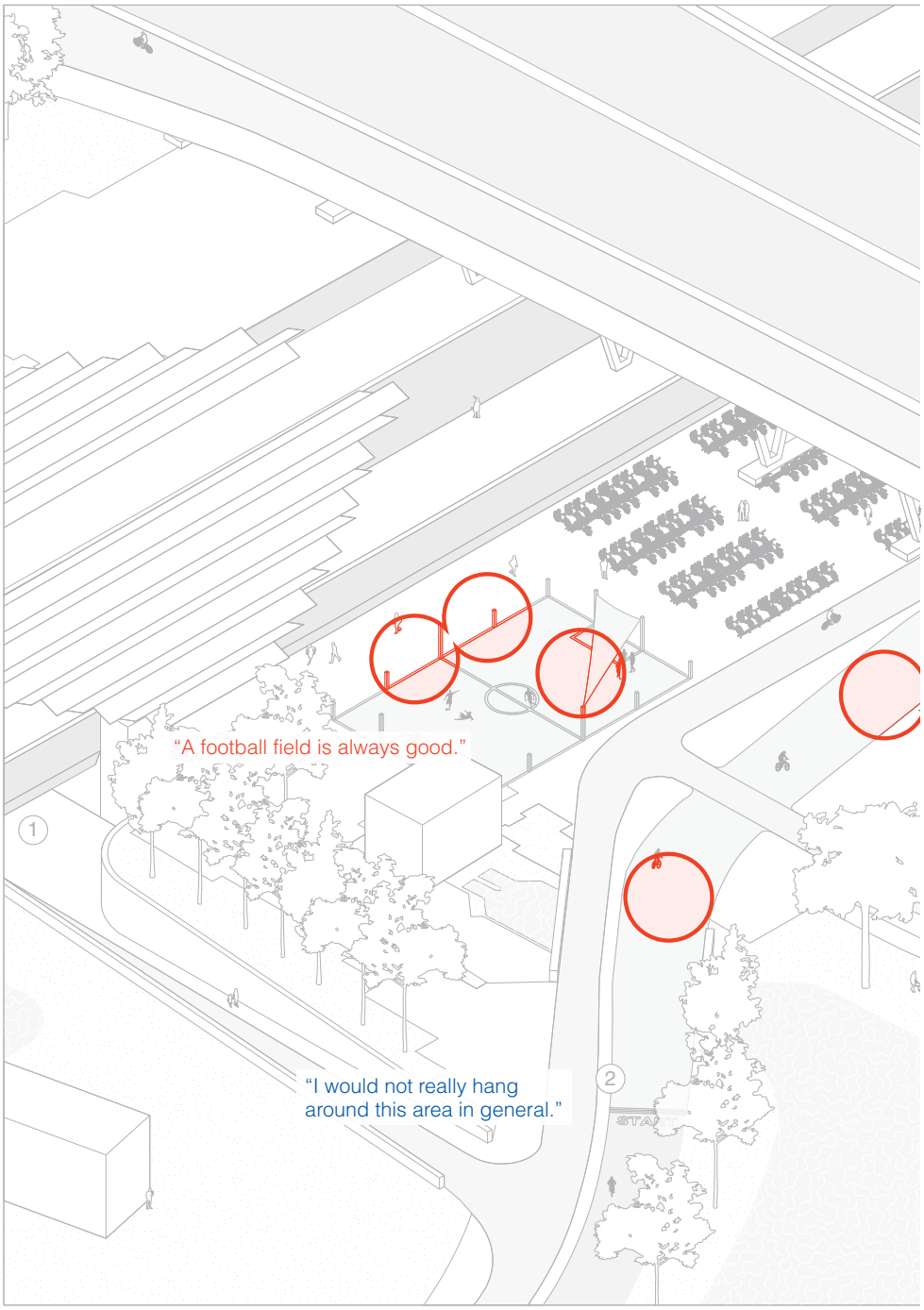
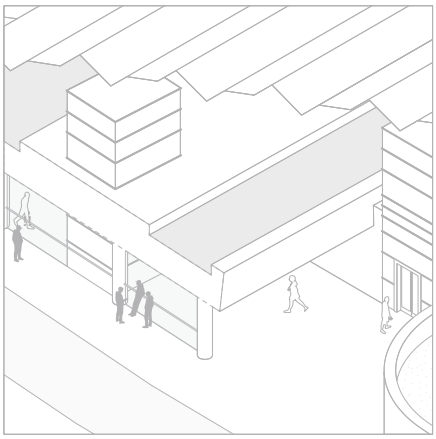


fig. 7.24: evaluation of project site 3



"I like that you can use a place which otherwise has no use."

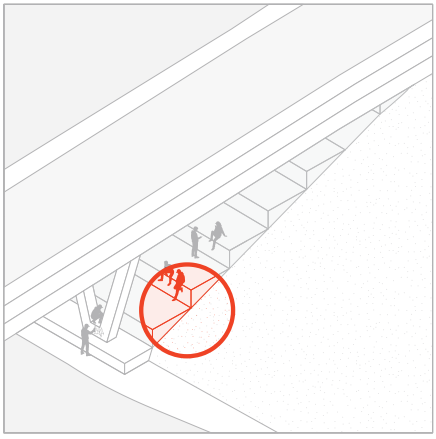
"Nobody will be able to see us as a nuisance here."



1



2



3

preference
dislike



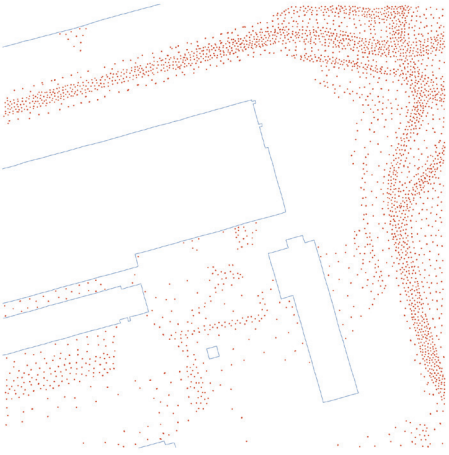
project site 1 - *old situation*



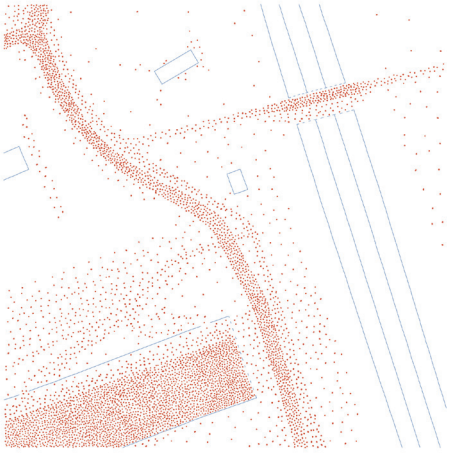
project site 1 - *new situation*



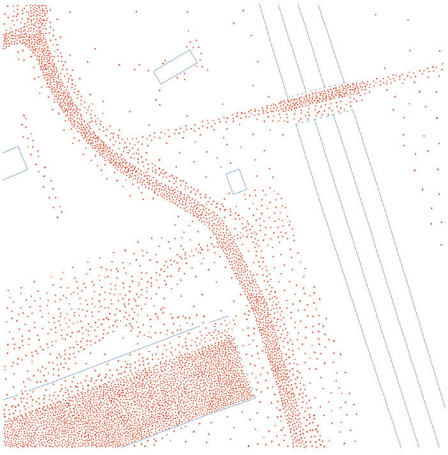
project site 2 - *old situation*



project site 2 - *new situation*



project site 3 - *old situation*



project site 3 - *new situation*





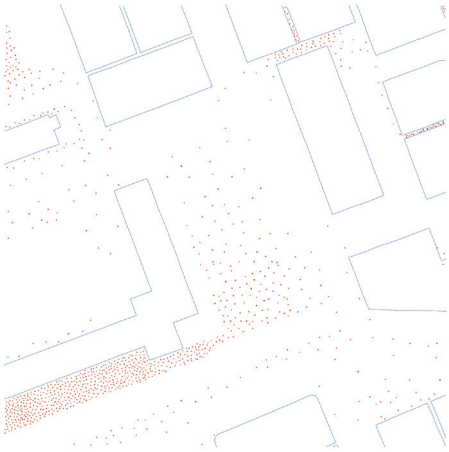
It has been previously stated that, for youth, it is important that urban space is not too loose, as loose urban space does not allow the youth to test different behaviours and societal boundaries. However, space should also not be too tight, as unplanned behaviour in tight spaces is likely to be perceived as a nuisance. Therefore, a middle ground should exist in which the youth can appropriate public space without causing excessive nuisance. At the same time, places of retreat require the youth to be able to withdraw from any presumptions concerning acceptable behaviour, and therefore require looser spatial conditions.

project site 1:
Previously, public space around the Multatuliweg could be considered very loose, as the limited programming in the area was concealed by the vegetation. The playground, meant to be used by children, could be considered relatively tight and would therefore be prone to appropriation, if youth were present in the area. The addition of a walking route through the area has created additional tight space. As a result, a gradient from tight to loose space is established, creating greater opportunities for appropriation.

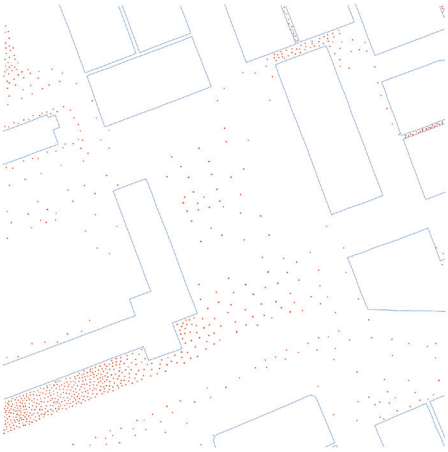
project site 2:
Similar to project site 1, the parking lot could be considered loose space, as its design allows for a variety of different behaviours (Franck & Stevens, 2007). To provide greater opportunities for youth appropriation, multiple routes have been established throughout the area, thereby creating micro-territories in between that are suitable for use by youth. Additionally, design measures limiting noise exposure on the building façade have made the alleyway looser and therefore more suitable to be a place of retreat.

project site 3:
The concept for project site 3, based on the identification of possible areas of conflict and the provision of youth-oriented facilities within these spaces, is affecting locations that had already been identified as tight spaces, often making them tighter. The presence of youth can be understood to enlarge the perceived nuisance around this area. One possible exception can be identified in the redevelopment of an underpass below the Kruithuisweg. Through the use of secondary design elements, clearly intended for sitting or leaning, the space may become less tight, as youth are using space which is otherwise unused in a way which is supported by the design.

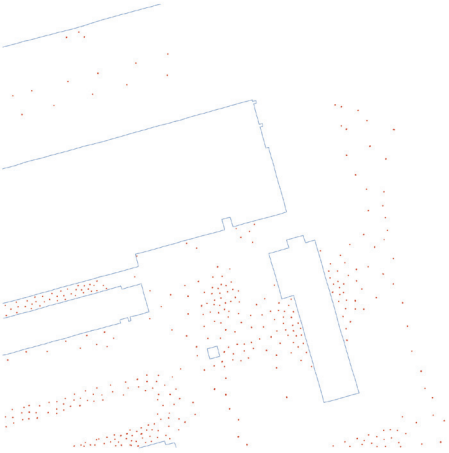
fig. 7.25: evaluation on the design's influence on tight and loose urban space



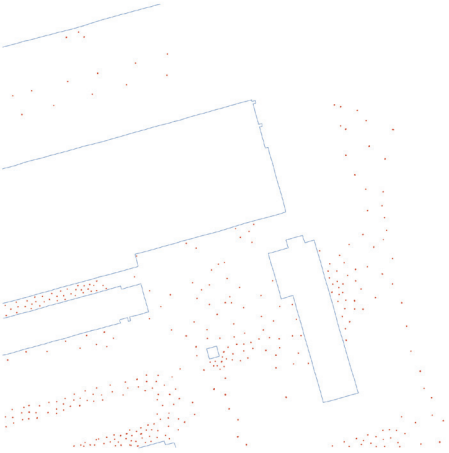
project site 1 - *old situation*



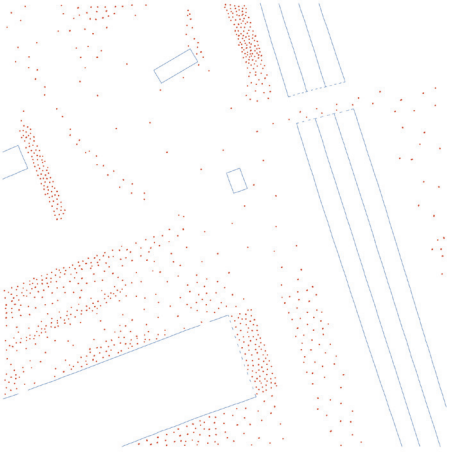
project site 1 - *new situation*



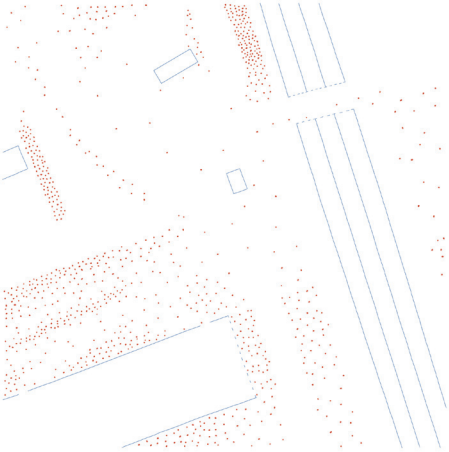
project site 2 - *old situation*



project site 2 - *new situation*



project site 3 - *old situation*



project site 3 - *new situation*

retreat interaction

0 100 m

N

Places of retreat and places of interaction serve different functions in facilitating youth behaviour. On the one hand, the youth need to be able to present themselves to an audience in order to test their behaviour; on the other hand, they use public space in an effort to find privacy. Their spatial environment should support both functions, and therefore both places of interaction and places of retreat should be present in close proximity to one another.

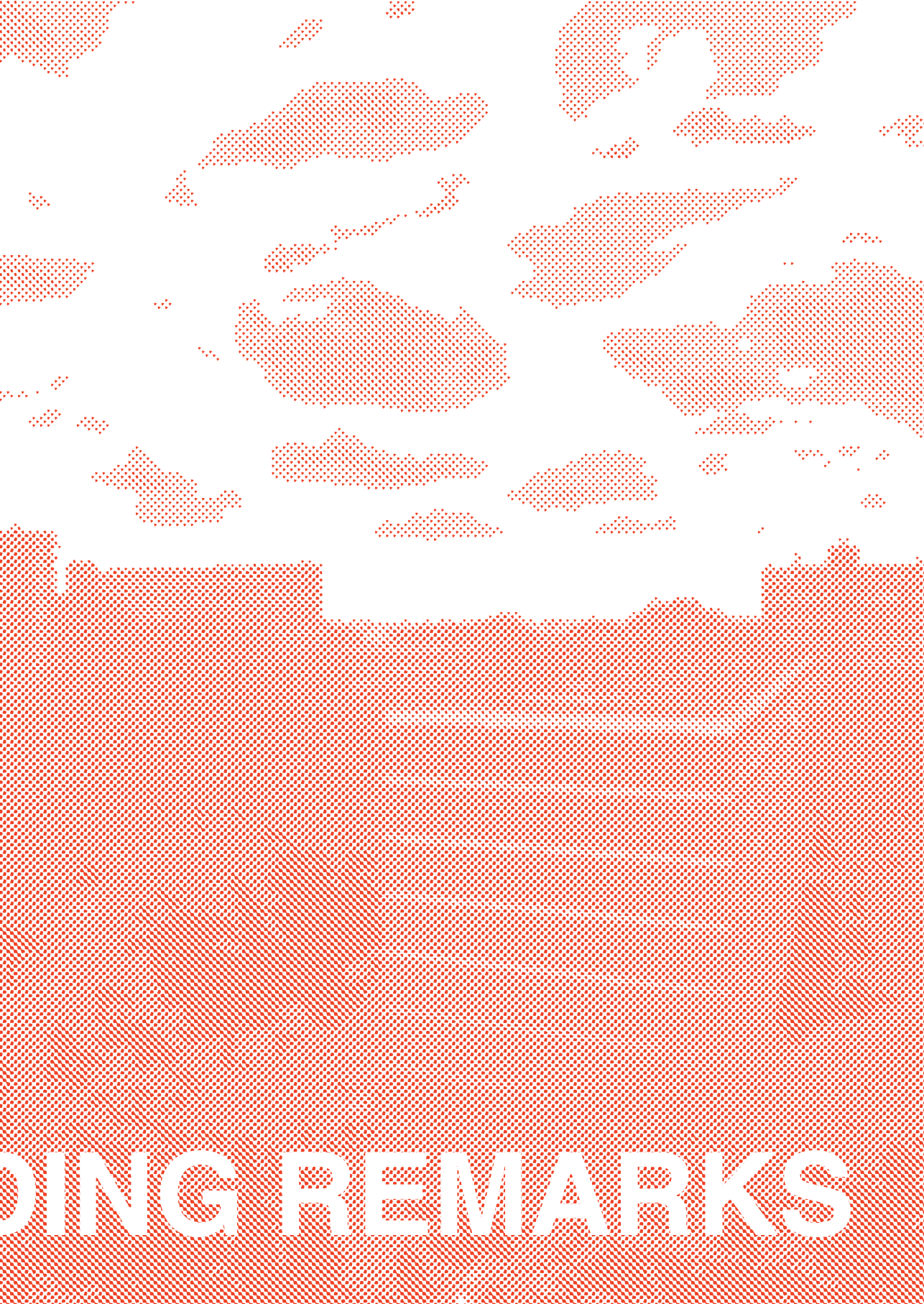
project site 1:
The clear distinction between places of interaction and places of retreat was one of the defining characteristics of the location. The addition of a walking path, functioning as an axis of interaction, and the removal of any unnecessary barriers have ensured a more gradual gradient between retreat and interaction, rather than the sharp contrast currently visible. At the same time, by designing a place of retreat, it can simultaneously attract more youth, though which its opportunities for interaction are enhanced. This creates a contradiction, raising questions regarding the extent to which a place of retreat can, and should, be designed.

project site 2:
Due to the presence of multiple public facilities in the area, the environment surrounding project site 2 is in many ways an environment of interaction. The design of public space is therefore unlikely to produce major changes without broader programmatic restructuring. By redesigning the parking lot, opportunities for interaction have slightly increased, although this does not constitute a major transformation in the possibilities for interaction in the area. The spatial interventions which reduce noise exposure also do not provide greater opportunities for interaction and, as such, the alleyway can remain a place of retreat. The area can therefore still provide the youth with the opportunity to shift between interaction and retreat within the same environment.

project site 3:
Similarly, interaction around project site 3 is primarily determined by its function as an area of transit. Efforts to attract a new user group, namely youth, further introduce opportunities for interaction. However, these spatial interventions again do not constitute any major transformation.

fig. 7.26: evaluation on the design's influence on places of retreat and places of interaction

08. CONCLUD


DING REMARKS

sub-questions

SUB-QUESTION 1:
What socio-spatial aspects affect the behaviour of the youth and how is this related to the design of post-war, high-rise neighbourhoods?

The socio-spatial aspects affecting youth behaviour have been primarily identified through ethnographic research, forming the basis for a workshop that served as the starting point for participatory action research. Additional research analysing human behaviour around reference projects was used to further study socio-spatial aspects of youth behaviour in public spaces. Through literary, statistical, and geographical research, the relationship between perceived nuisance associated with youth behaviour and the design of post-war, high-rise neighbourhoods was established.

This thesis identified socio-spatial needs concerning the design of public spaces, both on the scale of street-level fixtures and the larger configuration of public spaces and buildings within the neighbourhood. In addition, the social environment in which youth behaviour takes places has proven to be an important factor. While no hierarchy was identified in this thesis, certain elements seem to recur more frequently, or appear to function as prerequisites for youth presence in many situations.

In particular, secondary design elements have shown to attract youth. Their ambiguity allows for appropriation, freedom of expression, and therefore the testing of behaviour, and, depending on their location and function, they allow the youth to challenge the spatial hegemony of adults. Challenging the spatial hegemony of adults is common among places which can be considered tight urban spaces (Franck & Stevens, 2007) and places of interaction (Lieberg, 1995). A socio-spatial element that appears to be a prerequisite for these locations is the presence of other users of public space, which is necessary for the testing of different behaviours and societal boundaries. It is important that youth are able to move between places of interaction and retreat; however, the socio-spatial aspects constituting a place of retreat remain vague. Being removed from any form of surveillance and located within the vicinity of a place of interaction can be considered conditions that support places of retreat, but tangible conclusion on street-level spatial conditions remain limited.

While the exact characteristics of places of retreat remain undefined, this thesis has made evident that a disbalance between places of interaction and places of retreat in post-war, high-rise neighbourhoods can be identified as a major contributor to the heightened levels of perceived nuisance in these neighbourhoods. The functionalist identity of the neighbourhood limits opportunities for interaction, and therefore experienced nuisance, to a single centrality. At the same time, modernist design principles create tight urban spaces, through which resistance towards unplanned behaviour can arise. In addition to the disbalance between places of interaction and places of retreat, youth in post-war, high-rise neighbourhoods are more likely to be found in public space, as the average amount of living space per person in these neighbourhoods is relatively low, causing the youth to seek privacy elsewhere.

SUB-QUESTION 2:
What are the lived experiences and wishes of the youth in Voorhof concerning public space?

To understand the lived experiences of the youth in Voorhof, it was essential to be engage in conversations with them, not only about their experiences in public space, but also about their daily lives, in order to gain deeper insights into the embedded systems which influence their behaviour. Throughout this thesis, personas have been used to communicate lived experiences and behavioural patterns identified through ethnographic research.

Through these conversations, clarity regarding many of the behavioural traits of the youth was obtained. In particular, conversations revealed how their preferred locations for meeting friends are influenced by their surroundings and growing up in a post-war, high-rise neighbourhood. While the theory had already established the need for interaction among youth, thereby explaining their heightened presence around shopping centre De Hoven, these conversations also revealed additional motivations that are less frequently addressed in existing literature. In the experience of the youth, the presence of others was not the primary motivation for choosing specific locations. Instead, the availability of a supermarket or other means to purchase food played a significant role in shaping their behaviour. Community figures and youth workers would also play an important role, as they were able to provide a welcoming environment, whereas many other parts of the neighbourhood could be perceived as less welcoming.

On a larger, systemic level, youth behaviour is often shaped by spatial injustices. Their search for privacy in public space is initially caused by the constant supervision (Lieberg, 1995), but this is amplified by the relatively low amounts of living space per person in the neighbourhood. Other systemic injustices, such as youth-oriented exclusionary policies, also affect their use of public space and, more importantly, influence

their future opportunities.

When youth are asked how their experience of public space can be improved, they often express their wish for additional football fields, as demonstrated both in parallel research in Voorhof and in studies concerning other neighbourhoods in the Netherlands (Van Lieshout & Aarts, 2008). However, this does not fully correspond with their preferred locations as pointed out during the workshop. Therefore, their wishes were further examined through evaluation of proposed designs of public space, during which participants more frequently expressed their preference for secondary design elements and canopies that could function as meeting places, rather than sports facilities.

SUB-QUESTION 3:
How can the design of public spaces in post-war, high-rise neighbourhoods lessen the density of nuisance by youth at one centrality?

Before adressing the design of public spaces, it is necessary to define the potentialities in creating a neighbourhood with a polycentric model of testing societal boundaries. This thesis has researched and highlighted the ways in which the modernist principles that form the foundation for the design of post-war, high-rise neighbourhoods, and thus their public space, affect youth behaviour. The functionalist structuring of the neighbourhood ensures that possibilities for interaction are limited, and mostly located around the shopping centre. Consequently, this is also where the youth go to test societal boundaries, behaviour that is often perceived as a nuisance.

In order to lessen the density of nuisance at one centrality, the conditions present at this centrality need to be replicated at different locations distributed throughout the neighbourhood. This thesis first defines the sections of the neighbourhood in which the creation of a polycentric model of disturbances would be most beneficial. This is achieved through geographic analysis of socio-spatial elements that affect the presence of youth in public space. Within these neighbourhood sections, locations are identified that can imitate the conditions of the current place of interaction. However, the main condition, namely the presence of others to create opportunities for interaction, heavily limits the potential locations, especially as the modernist design of the neighbourhood restricts pedestrian movement. Potentialities for the creation of a polycentric model of disturbances are recognised around supermarkets and areas of transit; nonetheless, the design of public space must be adapted to stimulate youth presence.

This thesis proposes a set of strategic actions that can function as guidelines for the design of public spaces in order to facilitate both interaction and retreat. In particular, it is important to facilitate interaction by steering the presence of other users of public space. Youth should be provided with multiple micro-territories from which this interaction can be sought, as youth behaviour is versatile and a single facility is therefore unlikely to sufficiently attract youth away from the existing centrality. The use of multiple micro-territories can also locally assure a lower density of nuisance. However, the possibility of achieving major transformations in opportunities for interaction through the design of public space proves limited, as opportunities for interaction are largely dependent on the presence of facilities, while the design of public space is often merely an instrument to facilitate interaction.

To prevent excessive nuisance, it is important that no place can be considered overly tight (Franck & Stevens, 2007), as even within a polycentric model of disturbances, tight spaces can cause a heightened level of nuisance. Therefore, experienced space should be carefully considered when designing facilities that cater to the needs of the youth. Design should simultaneously be used to facilitate the testing of societal boundaries while ensuring the coexistence of different user groups through design measures that improve perceived safety and the general liveability.

main research question

MAIN RESEARCH QUESTION:
What socio-spatial interventions can be taken to enhance social cohesion of adolescent youth in post-war, high-rise neighbourhoods through participatory research methods?

The research conducted in this thesis has shown that youth behaviour, particularly the need to discover societal boundaries, while relevant for their personal development, can also be perceived as a nuisance by other users of public space. In post-war, high-rise neighbourhoods, these perceptions of nuisance are indirectly amplified through the modernist and functionalist design principles that form the foundation of these neighbourhoods. The testing of societal boundaries requires the presence of other users of public space (Lieberg, 1995), yet the presence of other users of public space in post-war, high-rise neighbourhoods is often restricted to one centrality. Consequently, the testing of societal boundaries, and thereby the perceived nuisance, also becomes concentrated within one centrality.

Besides the limited presence of other user groups, public space in these neighbourhoods is often designed according to the needs and preferences of adults, also referred to as the spatial hegemony of adults (Valentine, 1996). In response to their need for both interaction and retreat, youth appropriate public space that has been designed according to this adult spatial hegemony, resulting in competing claims over public space, a catalyst for conflict between youth and adults (Childress, 2004). This conflict over public space, alongside the experienced nuisance associated with youth behaviour, negatively affects mutual tolerance, which consequently weaken social cohesion within the neighbourhood (Schiefer & Van der Nol, 2017). Therefore, a strategy that can mediate the conflict concerning public space, while simultaneously creating a more even distribution of nuisance, may contribute to improving social cohesion between adolescent youth and other users of public space.

In order to gain a deeper understanding of adolescent youth and their behaviour, this thesis applies participatory research methods, including ethnography and participatory action research. In contrast to more conventional research methods, continuous engagement with the youth and the establishment of a relationship of trust enable researchers to gain insights into the lived experience (Risbeth et al., 2018). These insights proved to be a valuable source of information, as the framework of strategic actions developed throughout this thesis was primarily informed by ethnographic research.

This framework of strategic actions constitutes the socio-spatial interventions proposed to create a polycentric system of disturbances, aimed at enhancing social cohesion between the youth and other users of public space. Spatially, it is important to provide the youth with secondary design elements in the vicinity of places of interaction. These secondary design elements allow for appropriation by youth, while reducing the likelihood of conflict, as their function remains ambiguous and does not cause conflict with the spatial hegemony of adults. Through appropriation, the youth create micro-territories, of which multiple should be available in close proximity to one another, as youth behaviour is versatile.

Alongside spatial interventions, the social infrastructure within the neighbourhood should be maintained and extended. Community figures and youth workers play an important role in mediating between the youth and other users of public space, but also function as role models, positively influencing the future ambitions of the youth.

Finally, perceptions of safety are often lower around youth groups (Liedelmeijer et al., 2009), negatively affecting public discourse concerning youth (Ruigrok et al., 2017). This, in turn, reinforces stigma (Devlin, 2006), limiting societal engagement (Deakin et al., 2022), and worsening social cohesion (Schiefer & Van der Nol, 2017). Consequently, mitigating perceptions of unsafety may contribute to strengthening social cohesion between youth and other users of public space.

In conclusion, through redevelopment of public space around multiple places of interaction within post-war, high-rise neighbourhoods, combined with the provision of multiple micro-territories shaped by secondary design elements, and the maintenance and extension of social support structures, can contribute to a more even distribution of perceived nuisance throughout the neighbourhood. By lessening spatial conflict, these interventions can ultimately contribute to improving social cohesion.

discussion & limitations

Ethnographic research, while a valuable source of information, does not come without its limitations. Within this thesis, these limitations primarily concern the context, scope, and timeframe of the ethnographic research. As the research was conducted at youth centre The Mall, it focused on a specific group of youth who both live in Voorhof or surrounding neighbourhoods and engage with the youth centre. Consequently, the findings are at risk of being overly context-specific. Additionally, youth who visit the youth centre are more likely to hold a positive attitude towards social support structures. This may have influenced the emphasis placed on the importance of community figures within this thesis. Furthermore, the perspectives, needs, and preferences of youth who do not make use of social support structures have not been identified.

Another limitation concerns the relatively limited timeframe during which the ethnographic research was conducted. While a relationship of trust was established to a certain extent, a deeper connection might have been possible given a larger timeframe, possibly increasing the youth's willingness to share their lived experiences. A broader distribution of participants and a longer timeframe would likely have contributed to a more varied and nuanced understanding of youth behaviour and socio-spatial needs within the neighbourhood.

Within ethnographic research, the risk of researcher bias should be acknowledged. Research is inherently shaped by the positionality of the researcher and, as previously stated, positionality can shift throughout the research process. Meeting the youth at the youth centre on a weekly basis, combined with living in the same neighbourhood and occasional brief interactions, a relationship is formed which can affect the researcher's ability to maintain a critical perspective on youth behaviour. This may also have limited the extent to which the lived experiences of other users of public space, often referred to in this thesis as perceived space, were considered. While the effects of youth presence on the wider urban environment were not entirely disregarded, they were not examined in depth within this the scope of this thesis.

Finally, it is important to acknowledge that, within the social sciences, it remains impossible to predict the outcomes of the intended interventions. As Lefebvre (1996) states: "the architect is no more a miracle-worker than the sociologist. Neither can create social relations, although under certain favourable conditions they help trends to be formulated" (pp. 150-151). While strategic actions proposed in this thesis have been ethnographically and theoretically evaluated, the actual effects remains uncertain.

recommendations for future research

This research has aimed to bridge the knowledge gap concerning the interrelatedness between the built environment of post-war, high-rise neighbourhoods and youth behaviour. However, substantial knowledge gaps concerning the community studied in this thesis remain. In order to contribute to more spatially just neighbourhoods, further research across different fields is required.

First, as this research is based on a case study, additional research into the socio-spatial needs of adolescent youth in public space is needed in order to evaluate the broader applicability of the findings. Within post-war, high-rise neighbourhoods, the proposed strategic actions should be further tested and evaluated. At the same time, the socio-spatial needs of adolescent youth in other neighbourhood typologies also requires research, as a one-size-fits-all solution is unlikely to exist.

Furthermore, this thesis has not been able to sufficiently examine the socio-spatial affordances of places of retreat, but has rather focused on places of interaction, as these are more directly associated with perceived nuisance and therefore impact the social cohesion. However, the youth's need for privacy should not be underestimated, especially in neighbourhoods where the amount of living space per person is relatively low. Therefore, further research into the possibilities of designed places of retreat would be beneficial.

Lastly, greater analysis of the broader systems in which youth behaviour takes place would contribute to a greater understanding of the lived experiences of the youth. This research could provide deeper sociological insight into the motivations underlying youth behaviour, contributing to a broader understanding of the subject as a whole.

the chosen topic and its relation to urbanism

Throughout this thesis, I have often questioned the relevance of urbanism within the topic of youth behaviour in post-war, high-rise neighbourhoods. After all, if I identify the principles of modernist planning as a root cause of the problem, how can a solution be found within the realm of urbanism, without considering redevelopment of buildings, reconfiguration of functions or restructuring of neighbourhood networks, the elements which are distinctive of modernist neighbourhoods. At the same time, it has been the relationship between youth behaviour and the post-war, high-rise neighbourhoods which has been integral to retaining the relationship between the topic of *hangjongeren* and urbanism. The identification of a relationship between modernist design principles and the current monocentric system of disturbances has been highly influential on the development of this thesis and ultimately defines the interrelatedness of youth behaviour and the built environment.

Furthermore, the field of urbanism is not merely confined to spatial appearance of the built environment, but can be considered a generic term defining the intersectionality of many different fields, among which sociology, psychology, anthropology, urban sciences and urban design. These fields have informed this thesis and have provided insights into the interplay between people, the built environment, and systemic inequalities. The intersectional nature of the chosen topic has brought me the realisation that the importance and influence of urban planners can often be disregarded in societal challenges, as they are often considered to be the responsibility of politicians, local authorities and social workers. But at the same time, we, as urbanists, should acknowledge our limitations. The tools available to urbanists are not sufficient to solve societal challenges, nor should they be. The pursuit of spatial justice should not be a one sided conversation, but a collaborative process involving various professionals, and most importantly, the general public, as their experiences should be central in shaping urban environments.

The field of urbanism can contribute to a more equitable environment by providing the youth with the agency to appropriate urban space and develop themselves through interaction, while simultaneously reducing the experienced nuisance of other users of public space. However, spatial design alone cannot resolve broader societal challenges which are known to influence youth behaviour. The work of youth workers, community institutions, and other support networks therefore remain essential. This thesis has taught me that urbanism can support these social structures, and vice versa, and that they are not interchangeable but rather complementary.

research methodologies

This thesis combines many different methods, many of which are centred around ethnographic research. The importance of ethnography as a research method became evident early in the research process, as participation in events involving youth engagement provided me with insights into the limitations and possibilities of such events.

One of these events, organised at Pakhuis de Zwijger, illustrated how the absence of an established relationship between a young participant and the other interlocutors, among which designers, social workers and policy-makers, influenced the young participant's willingness to fully elaborate on his experiences. It also highlighted that structured interviews may not be an effective method to reach the youth, especially without a pre-existing relationship, as their willingness to share their experiences may be limited in such settings. The need to establish a relationship of trust with the youth was reinforced through visiting an event organised by the Wijkuniversiteit at youth centre The Mall. The presence of visitors with varying degrees of familiarity with the youth made differences in interaction clearly visible. Interaction between youth and youth workers were more open than compared to external visitors. This demonstrated again that, in order to reach this community, a relationship of trust is not only beneficial, but also a necessity for meaningful participation.

Further analysis of ethnography as a research method confirmed its usefulness in informing design practice, especially in areas of high ethnic diversity (Risbeth et al., 2018), but also made me aware of the limitations of ethnographic research. Risbeth et al. state that "deep understanding is seldom achieved in tight timeframes" (p. 38). Conscious of the ever-present deadline of the thesis, this limitation was taken into account, but ultimately did not affect the moments of data gathering, as "ethnographic findings can constitute a first step in the process of designing inclusive public spaces" (p. 50) and the postponement of data gathering would have limited subsequent research.

Another limitation identified through literary research is that ethnographic research often emphasises "the social meaning of actions they observe in the field, while avoiding analysis of the broader systems in which these lived realities are embedded" (Thieme et al., 2017, p. 128). To overcome this limitation, this thesis does not only draw from ethnographic research, but uses a triangulation of other methods to validate and complement findings from ethnographic research (Tickle, 2017). However, it is important to acknowledge that a thorough analysis of the broader systems in which

youth behaviour takes place has not been conducted.

This triangulation of literature review, ethnographic research, geographical analysis, and analysis of reference projects ensures credibility of research findings, but also ground the research in theory, factual elements of the built environment, and extends the scope of this research beyond youth behaviour in Voorhof. It has been the use of different research methods that has enabled me to develop the strategic actions, tying this thesis together.

the role of urban design in theoretical research

Starting this thesis, the ambition was to develop a realistic design, a solution to the problem at hand, something which could be implemented directly into the neighbourhood. Theoretical research was initially used as a means to inform the design process and to develop a deeper understanding of the spatial needs concerning youth behaviour.

Throughout the development of this thesis, the limited amount of existing knowledge concerning the researched community became evident. Bridging this gap proved to be a time-extensive process. The process of establishing a relationship of trust, analysing workshop results and reference projects, and additional theoretic research, limited the possibility of using design-led methods to inform research.

Therefore, priorities changed, and the desired outcome was adapted. Rather than functioning as a proposal for a definitive solution, urban design became a method of evaluation. The change in objectives also required a change in methodology. A participatory action research framework was adopted, in which research not only informed design, but design was also able to inform research. The design is no longer a final solution, but shows a visual interpretation of the developed strategic actions, through which they can be evaluated with the researched community. Within a broader timeframe, this process would ideally be an iterative cycle of data collection, reflection and evaluation (Baum et al., 2006), used to inform design practice.

societal relevance

During the development of this thesis, the societal relevance of the topic has become increasingly evident. On a spatial level, youth are recurrently being designed out of public space. This has manifested itself through the ban on gatherings at the Papsouwselaan in Voorhof, but the active exclusion of youth from public space is also occurring on a national level, where municipalities are researching and instating local bans on fatbike use (NU.nl, 2026). While grievances concerning youth behaviour are not to be neglected, as they are often justified, solutions should not be sought in restrictions, but rather in interventions that benefit all parties.

Simultaneously, the societal relevance of the topic on a larger systemic scale cannot be overstated. The stigmatisation and prejudice surrounding youth affect their future opportunities, but also affect their day-to-day life. This has become especially clear to me through the many conversations I have had with the youth. This thesis addresses the inequalities, that can partly be traced back to the built environment in which the youth spend their formative years. However, stigmatisation is often deeply rooted in society, suggesting it could be resolved through a set of strategic actions would be unrealistic. Rather, this thesis aims to contribute to a greater understanding of how the design of post-war, high-rise neighbourhoods affects youth behaviour, and offers a set of possible interventions that may contribute to more just neighbourhoods.

scientific relevance

Despite the vast amount of negative media attention concerning marginalised youth groups over the past thirty years, there has been relatively little research conducted concerning this community. In particular, the relationship between youth behaviour and the built environment has remained largely unaddressed in scientific literature. This thesis aims to bridge the knowledge gap concerning the relationship between modernist, post-war, high-rise neighbourhoods and heightened levels of perceived nuisance.

In order to establish a framework of interventions, this thesis proposes a methodology that differs from more conventional scientific research concerning this subject. Whereas other research often directly asks the youth about their preferences in public space, this thesis analyses their whereabouts, synthesises the results, proposes design interventions using strategic actions and evaluates these interventions with the youth. This approach generates outcomes that differ from alternative research methods, although their effect remain uncertain, as the research is limited to presumed youth behaviour, but has not been tested in a real-life setting.

ethical considerations

Working with marginalised youth groups, it is important to be aware of the ethics throughout the entire research process. The researched community can be considered part of the category of hard-to-reach youth, who are often more reluctant to participate in research and to engage with formal informed consent procedures (Bengry-Howell & Griffin, 2012). Especially in ethnographic

research, obtaining informed consent can introduce the risk of "methodological grooming, […] encouraging young people to take part in research projects despite their initial reluctance" (Bengry-Howell & Griffin, 2012, p. 405). To prevent the process of methodological grooming as described, all ethnographic research was conducted in the presence of a youth worker.

These and other potential ethical challenges were addressed in a data management plan, the development of which has made me more aware of research ethics, but also imposed limitations on the research process. The process of obtaining ethical approval restricted several research methods, such as my initial plans of the use of photo-voice as a research method. However, these limitations have also ultimately led me to prioritise informal conversations, through which a deeper insight into the lived experience of the youth was gained.

Throughout this thesis, personal struggles concerning reciprocity persisted. As this research is hypothetical, not conducted on behalf of the municipality, and primiarily meant to inform a personal master's thesis, it will not be able to directly affect the lived experience of the youth. While the goals of the research were communicated throughout the ethnographic research, particularly during moments of data gathering, concerns regarding reciprocity remained. Given the limited opportunities for reciprocal action, I ensured the research and data gathering were kept accessible and non-invasive. Nevertheless, reciprocity remains an important ethical consideration I am keen to work on in the future.

transferability

This thesis specifically examines the relationship between the behaviour of youth and the design of post-war, high-rise neighbourhoods. Similar neighbourhoods have been identified based on population density, Open Space Ratio and building age. These neighbourhoods have also been identified to be experiencing an increasing number of reports concerning youth-related nuisance. While this thesis has not evaluated the transferability of its results to similar neighbourhoods, the findings are likely to be relevant to other post-war, high-rise neighbourhoods in the Netherlands, as the strategic actions developed are abstract in their language, thereby remaining applicable to a broader range of contexts.

However, while this thesis often relates youth behaviour to modernist design principles, which form the foundation for post-war, high-rise neighbourhoods, the research remains grounded in ethnographic findings based on the lived experience of youth in Voorhof. Therefore, the strategic actions developed are shaped by the specific socio-spatial conditions of this case study. This limitation is also addressed by Risbeth et al. (2018), who note the need for findings from ethnographic research "to be tested and refined with regard to local contexts" (p. 48). The strategic actions developed during this thesis may be consideres applicable to other post-war, high-rise neighbourhoods; however, their implementation should remain sensitive to local context. Rather than being applied universally, interventions require careful evaluation and testing before implementation.

personal progress

Finally, this thesis has not only been an academic journey, but also a personal one. It has allowed me to explore unfamiliar research methods, which has contributed to my personal development. Seven years of education have provided me with the necessary capabilities to conduct literary research, analysis and design, but this thesis has been my first encounter with participatory research methods.

This process has not been without its ups and downs, but it has brought me more than I could have expected. While I initially posed that my position as an in-outsider would provide me with the basis I needed to do ethnographic research, establishing a relationship of trust required more than sharing a living environment. In order to establish a relationship of trust, additional barriers had to be overcome, as our backgrounds and everyday experiences differed significantly. It has forced me to step away from a purely academic view, and to look at this thesis from the perspective of the researched community.

This has made reconsider my own assumptions about growing up in post-war, high-rise neighbourhoods. Initially, I had not been aware of all the challenges the youth in Voorhof face, but also had preconceptions about the effects of growing up in neighbourhoods like Voorhof which turned out to be untrue. While this thesis mainly focuses on the spatial elements and how they are able to affect youth behaviour, personally, it has also given me a greater understanding of the lived experience of the youth in Voorhof.

Ultimately, this process has illustrated the need for participatory research within urban studies. It has shown that forming an understanding of the researched community requires more than observation or spatial analysis. I am grateful to have had the opportunity to experience this during this thesis.

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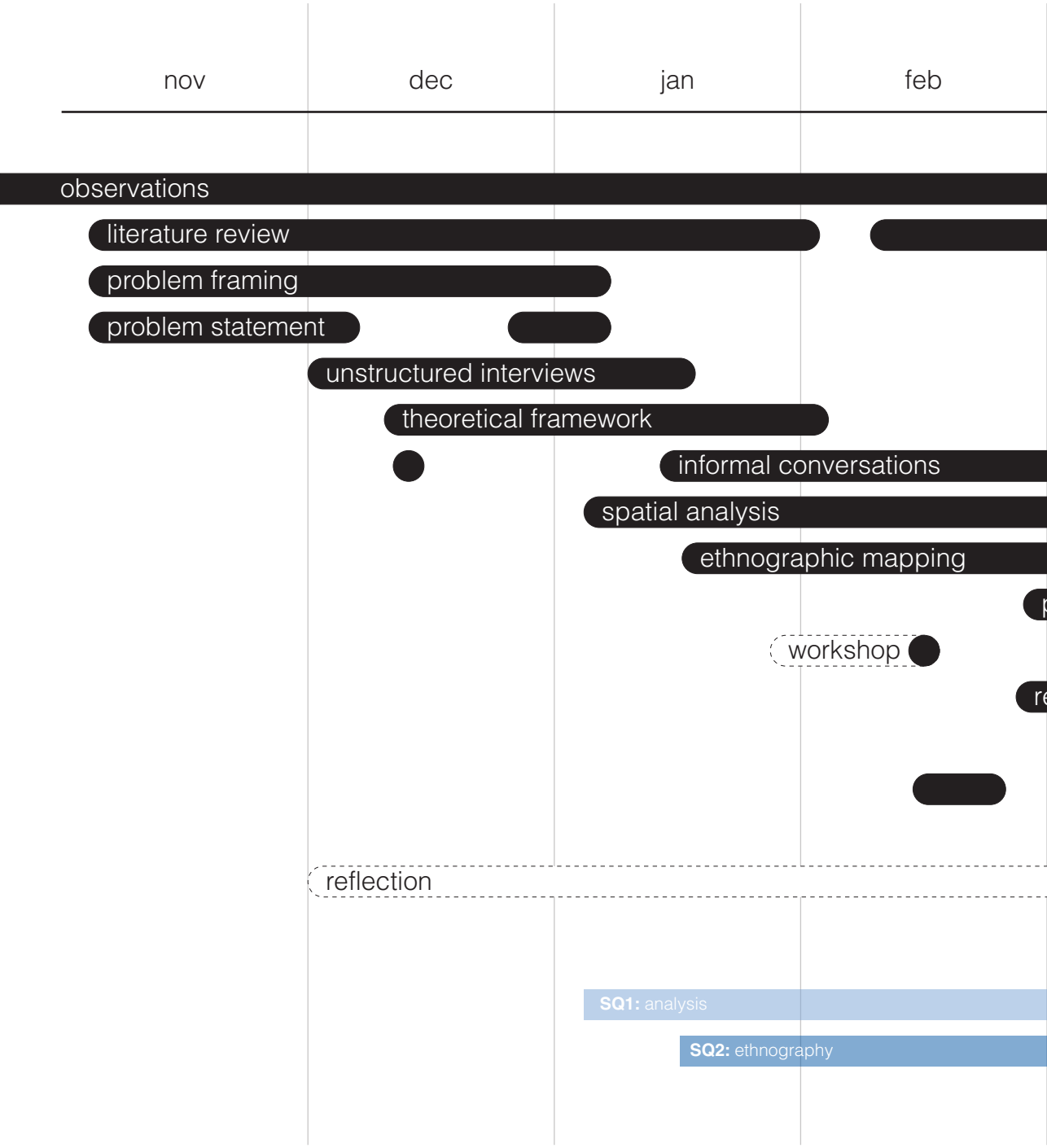
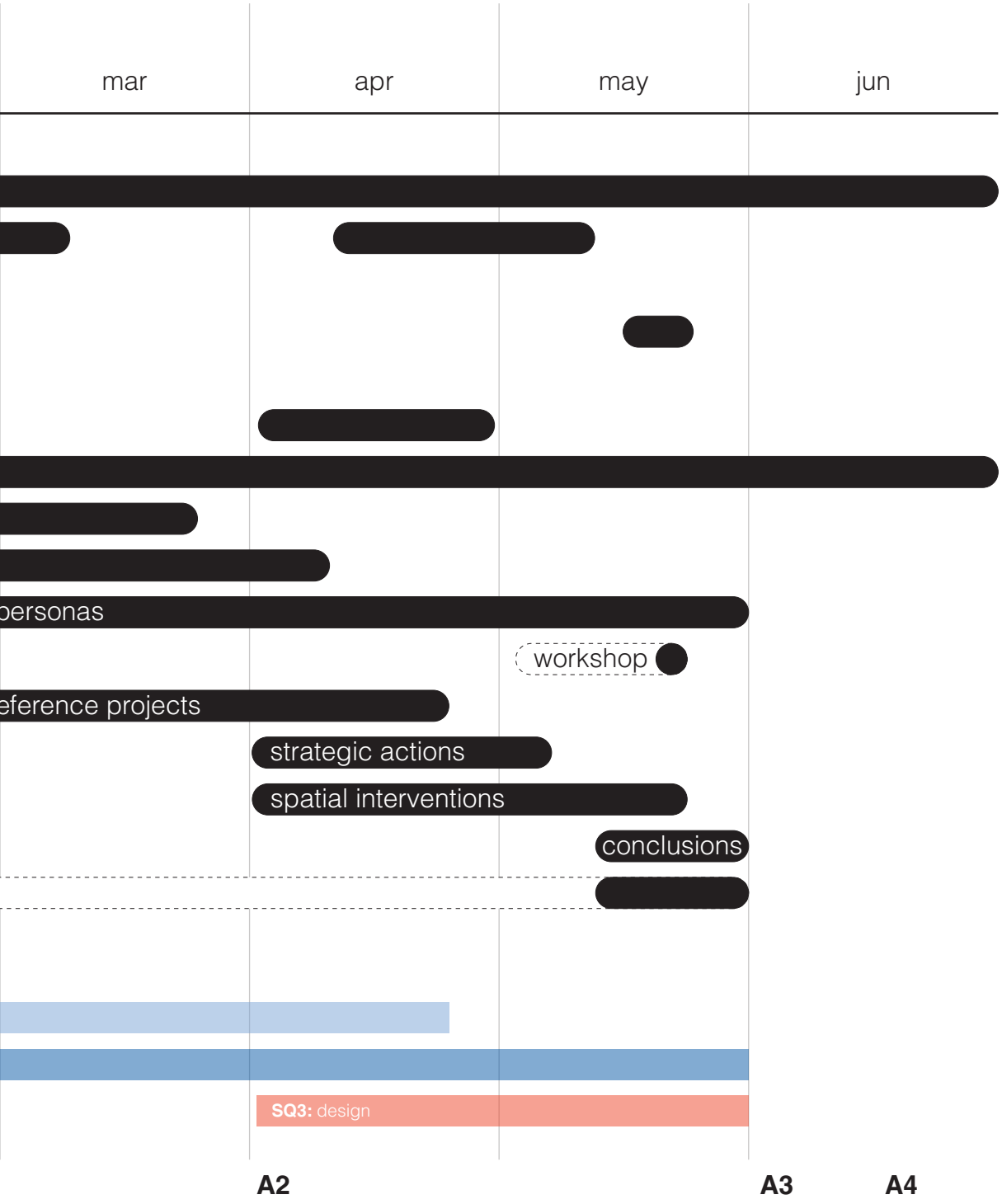
APPENDIX

appendix a: *research process*



A1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strategic actions
spatial interventions
conclusions
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A3
A4

appendix b: *ethical approval*

Date 07-May-2026
Correspondence hrec@tudelft.nl

Human Research Ethics Committee TU Delft
(http://hrec.tudelft.nl)

Visiting address
Jaffalaan 5 (building 31)
2628 BX Delft

Postal address
P.O. Box 5015 2600 GA Delft
The Netherlands

Ethics Approval Application: Geographies of Hanging Out in the Post-War, High-Rise Neighbourhood
Applicant: Bastiaansen, Joost

Dear Joost Bastiaansen,

It is a pleasure to inform you that your application mentioned above has been approved.

Thanks very much for your submission to the HREC which has been approved.

In addition to any specific conditions or notes, the HREC provides the following standard advice to all applicants:

• In light of recent tax changes, we advise that you confirm any proposed remuneration of research subjects with your faculty contract manager before going ahead.

• Please make sure when you carry out your research that you confirm contemporary covid protocols with your faculty HSE advisor, and that ongoing covid risks and precautions are flagged in the informed consent - with particular attention to this where there are physically vulnerable (eg: elderly or with underlying conditions) participants involved.

• Our default advice is not to publish transcripts or transcript summaries, but to retain these privately for specific purposes/checking; and if they are to be made public then only if fully anonymised and the transcript/summary itself approved by participants for specific purpose.

• Where there are collaborating (including funding) partners, appropriate formal agreements including clarity on responsibilities, including data ownership, responsibilities and access, should be in place and that relevant aspects of such agreements (such as access to raw or other data) are clear in the Informed Consent.

Good luck with your research!

Sincerely,

Dr. C. Shelley-Egan
Chair HREC
Faculty of Technology, Policy and Management

appendix c: *use of artificial intelligence*

This thesis has made use of AI tools to find sources, check grammar, spelling and academic tone, and generate images. As clear guidelines on the use of AI are not currently available, this appendix aims to provide clarity on the use of AI in this thesis. It will outline the prompts used and provide examples.

The following AI tools were used during this thesis:

ChatGPT by OpenAI
Adobe Firefly by Adobe

AI USE IN SOURCE FINDING

prompt: Do you have any often cited scientific articles on [...]?

example prompt: Do you have any often cited scientific articles on the Dutch concept of hangjongeren?

example output:

Yes — here are several widely-cited, scholarly works (articles, chapters, and a key dissertation) that discuss the Dutch concept **hangjongeren** (literally "hang-around youth" / loitering youth). I list the items most commonly cited in Netherlands-focused urban, youth and public-space research, with a one-line note about why each is useful and a source citation you can follow.

1. Martineau, E. M. (2006). "**Too Much Tolerance": Hang-Around Youth, Public Space, and the Problem of Freedom in the Netherlands** — PhD dissertation.
   — Ethnographic treatment of how hangjongeren are framed in media, policy and everyday talk; often referenced for the idea that the term constructs a social problem.
2. van Lieshout, M. & Aarts, N. (2008). "**Outside is where it's at! Youth and Immigrants' Perspectives on Public Spaces.**" *Space and Culture* 11(4): 497–513.
   — Empirical study of youths' and immigrants' use of public space in Dutch cities; frequently cited in discussions of "hanging out" and how policy overlooks youth perspectives.
3. van Aalst, I. (2021). "**Young people: being apart, together in an urban park.**" *Journal of Urbanism* (open access).
   — Investigates spatial dimensions of gathering and othering in Dutch parks; cites van Lieshout/Aarts and is often used in park/hangout literature. (Good for spatial/park case studies about hangjongeren).
4. de Koning, A. (2016). "**Tracing anxious politics in Amsterdam: Patterns of prejudice.**" *Patterns of Prejudice* — (includes discussion of Dutch preoccupation with hangjongeren and media framing).
   — Useful for linking hangjongeren discourses to wider debates on prejudice, gentrification and moral panics.
5. van den Bogert, K. (2022). **Chapter(s) on street sport, gender and Muslim youth** (book: *Street Football, Gender and Muslim Youth in the Netherlands*).
   — Uses "hangjongeren" as an analytical entry point when discussing interventions (youth work, sport) and moralizing of public space. Helpful for programmatic/policy angles.
6. VanderVeen, G. (2009). "**Hangjongeren en graffiti in beeld.**" *AGORA Magazine* (popular/academic-practice mix).
   — Short piece combining visual/material culture (graffiti) with public debates about hangjongeren; good for practice-oriented citations.
7. Core/grey literature & municipal reports: "**Aanpak hangjongeren in gemeenten**" (various local government/ toolkit documents) and Dutch masters' theses addressing "youth nuisance" — often cited in policy studies because many Netherlands studies cite municipal practice documents.
   — If you're researching policy responses (curfews, youth outreach), check municipal toolkits and Dutch MA theses (many are available via university repositories). Example thesis and literature surveys are accessible online.
8. Recent anthropological/urban articles that explicitly use the term (examples from 2022–2025) — e.g. Fiore (2024) "Navigating danger through nuisance: Racialized urban fears…" and related papers on sensory politics and gentrification that discuss hangjongeren as part of recent urban conflicts.
   — Useful to see how the term is used in newer debates about race, gentrification and sensory politics.

If you want, I can:

pull the **PDFs** or DOIs for any of the items above and assemble a short bibliography (APA/Chicago) with direct links; or run a targeted **Google Scholar** citation search and return the top 10 most-cited papers that include the word hangjongeren (or closely related English terms) so you can see citation counts and citing articles.

Which would you prefer?

This output is studied, the abstracts are read, and if a source is used, the entire article is read and reviewed without the use of AI. At no point is output generated by AI automatically assumed to be true.

AI USE IN TEXT WRITING

prompt:

Can you check this text for any grammatical and style mistakes, mark any changes you make please: [...]

example prompt:

Can you check this text for any grammatical and style mistakes, mark any changes you make please:

Lieberg (1995) defines two types of spaces: places of retreat and places of interaction. The youth have little access to places of retreat, both at home and at school they are often under supervision. In an attempt to find privacy, youth tend to retreat to backyards, stairwells, basements or parking lots. Another way in which the youth find privacy, is through informal appropriation of the public space, scooters and bikes can be used to create a barrier between them and other (Van Lieshout & Aarts, 2008). Places of interaction are more commonly found in the public space. Places with clear function often also host an important social function. Therefore, these places offer opportunities to meet other teenagers, but also to confront the adult world.

This can be related to the concept of tight and loose urban spaces developed by Franck and Stevens (2007). The looseness and tightness of a place is defined by the levels in which activities are tolerated, and thus dependant on the sentiment of it's users. Spaces which are seen as loose, are also likely to be considered as places of retreat for the youth. These are spaces in which their rebellious behaviour is somewhat tolerated. Places of interaction are often seen as tighter. These are places with higher levels of order and control and thus create tension and resistance, testing societal boundaries.

example output:

Below is your text with **grammatical and stylistic corrections clearly marked.**
I use **bold** for additions/replacements and ~~strikethrough~~ for removed text, keeping changes minimal and academic in tone.

Lieberg (1995) defines two types of spaces: places of retreat and places of interaction. ~~The~~ **Young people** have little access to places of retreat; **both at home and at school**, they are often under supervision. In an attempt to find privacy, ~~youth~~ **young people** tend to retreat to backyards, stairwells, basements, or parking lots. Another way in which ~~the youth find~~ **young people seek** privacy is through informal appropriation of ~~the~~ public space; scooters and bikes can be used to create a barrier between them and **others** (Van Lieshout & Aarts, 2008). Places of interaction are more commonly found in ~~the~~ public space. Places with **a** clear function often also host an important social function. Therefore, these places offer opportunities to meet other teenagers, **as well as** to confront the adult world.

This can be related to the concept of tight and loose urban spaces developed by Franck and Stevens (2007). The looseness and tightness of a place **are** defined by the **extent to which** activities are tolerated, and thus **depend** on the sentiment of ~~it's~~ **its** users. Spaces which are seen as loose are also likely to be considered ~~as~~ places of retreat for ~~the~~ **young people**. These are spaces in which their rebellious behaviour is somewhat tolerated. Places of interaction are often seen as tighter. These are places with higher levels of order and control, and **thus they** create tension and resistance, testing societal boundaries.

Key improvements made

- Replaced "**the youth**" with "**young people**" for a more neutral academic tone
- Fixed **punctuation and comma splices**
- Corrected **possessive error** (it's → its)
- Improved **clarity and flow** in longer sentences
- Increased **grammatical parallelism**

If you'd like, I can also:

- Make the text **more concise**
- Increase **theoretical depth**
- Align it with a **specific academic field or journal style**

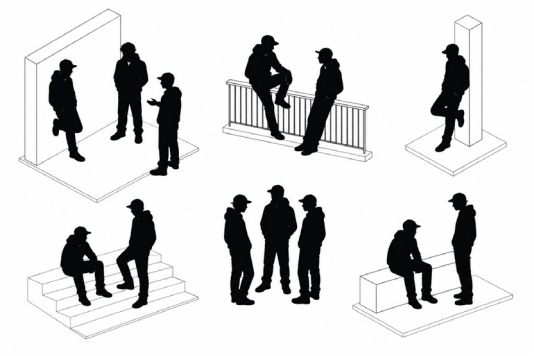
This output is studied, the changes in grammar, style and academic tone suggested by AI are evaluated by the author. At no point is output generated by AI copied or automatically assumed to be true.

AI USE IN IMAGE GENERATION

prompt: Can you create vector based, isometric [...] in full black?

example prompt: Can you create vector based, isometric loitering youth in full black?

example output:



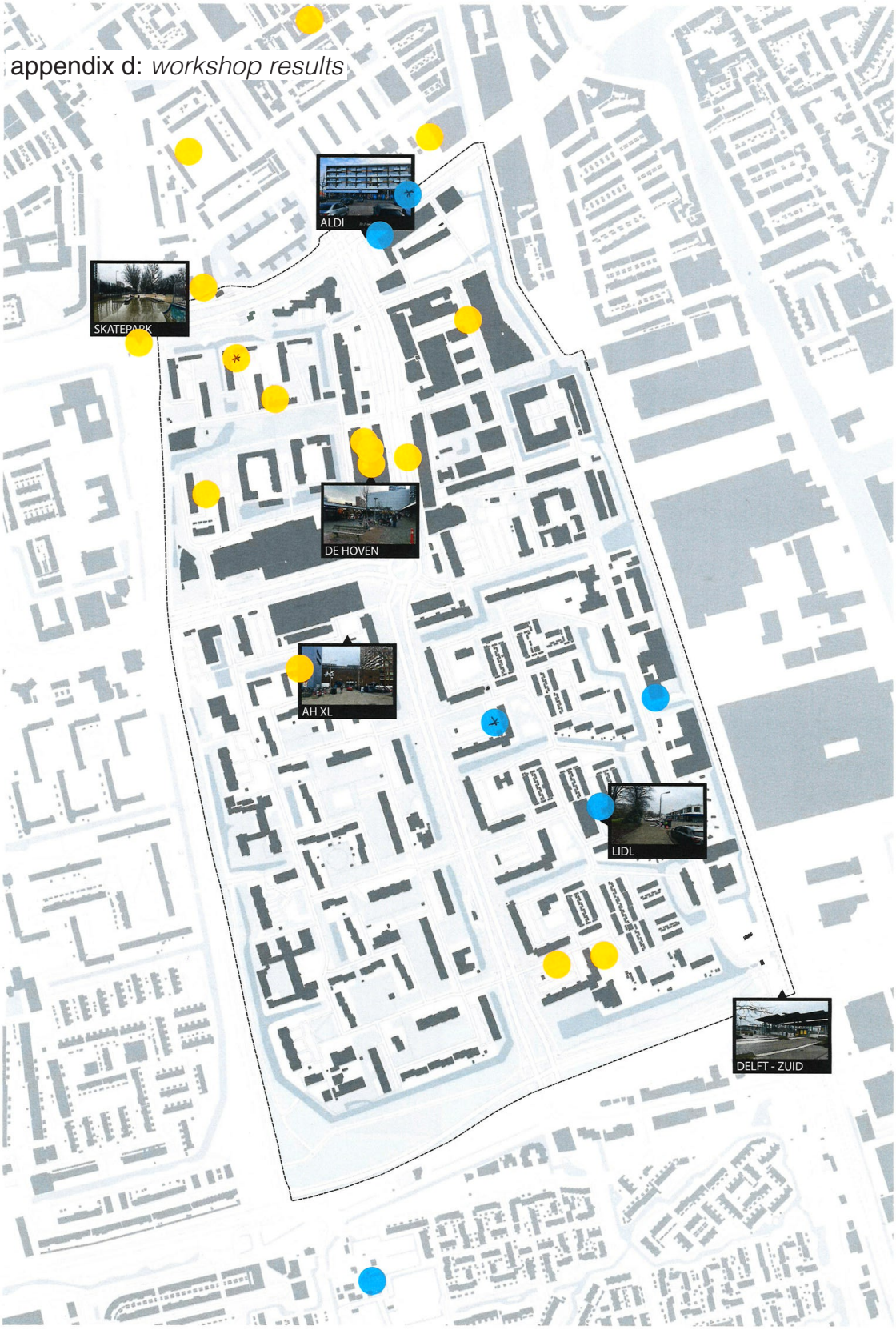
prompt: *remove tool* (Adobe Photoshop)

example prompt:



example output:

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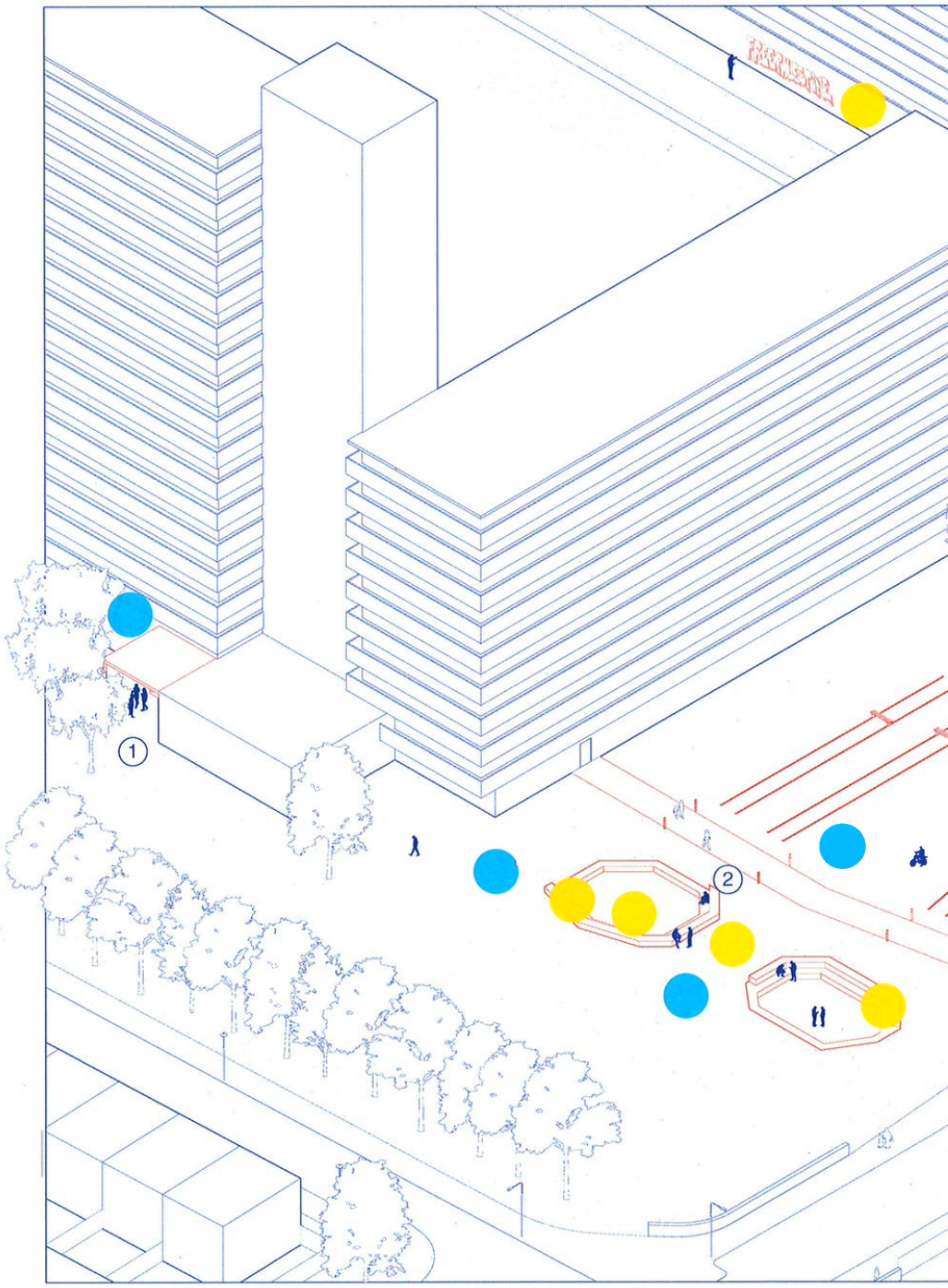
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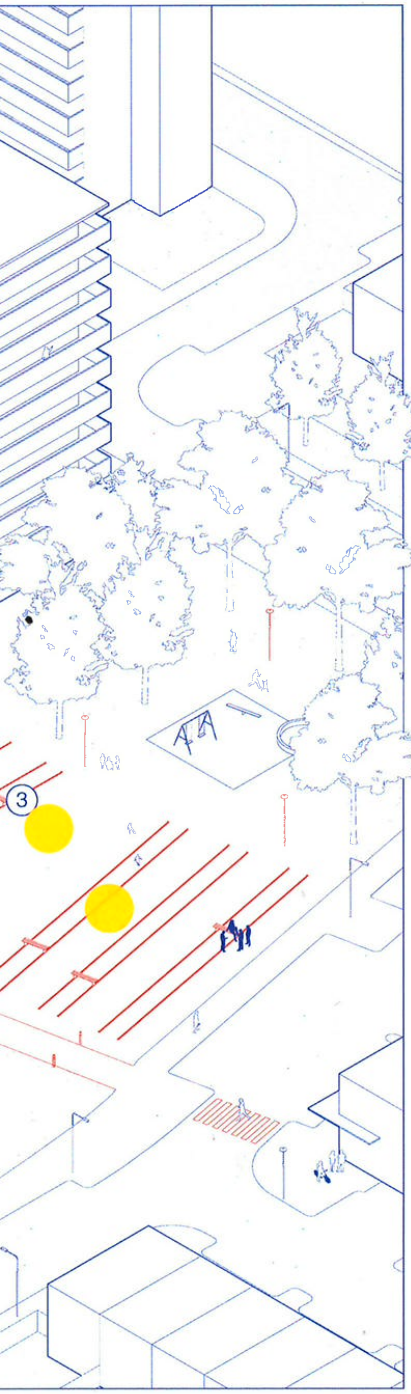
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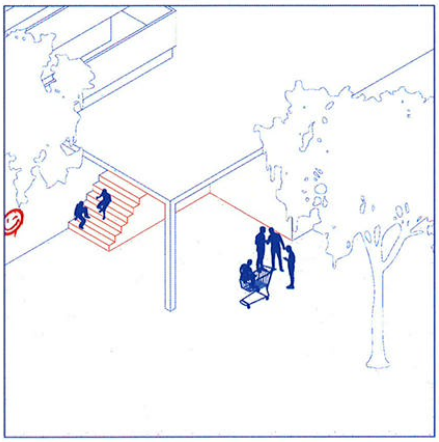
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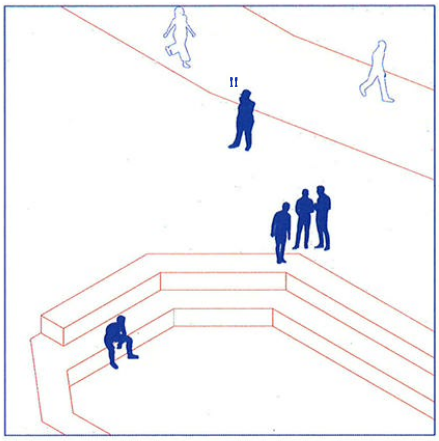
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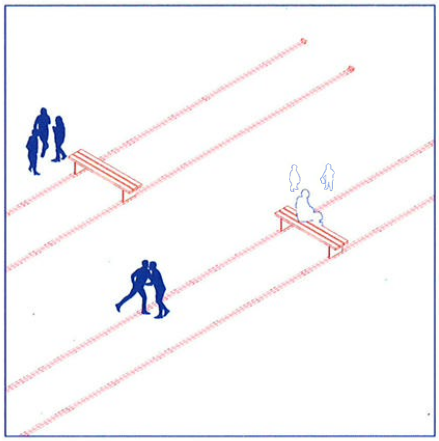
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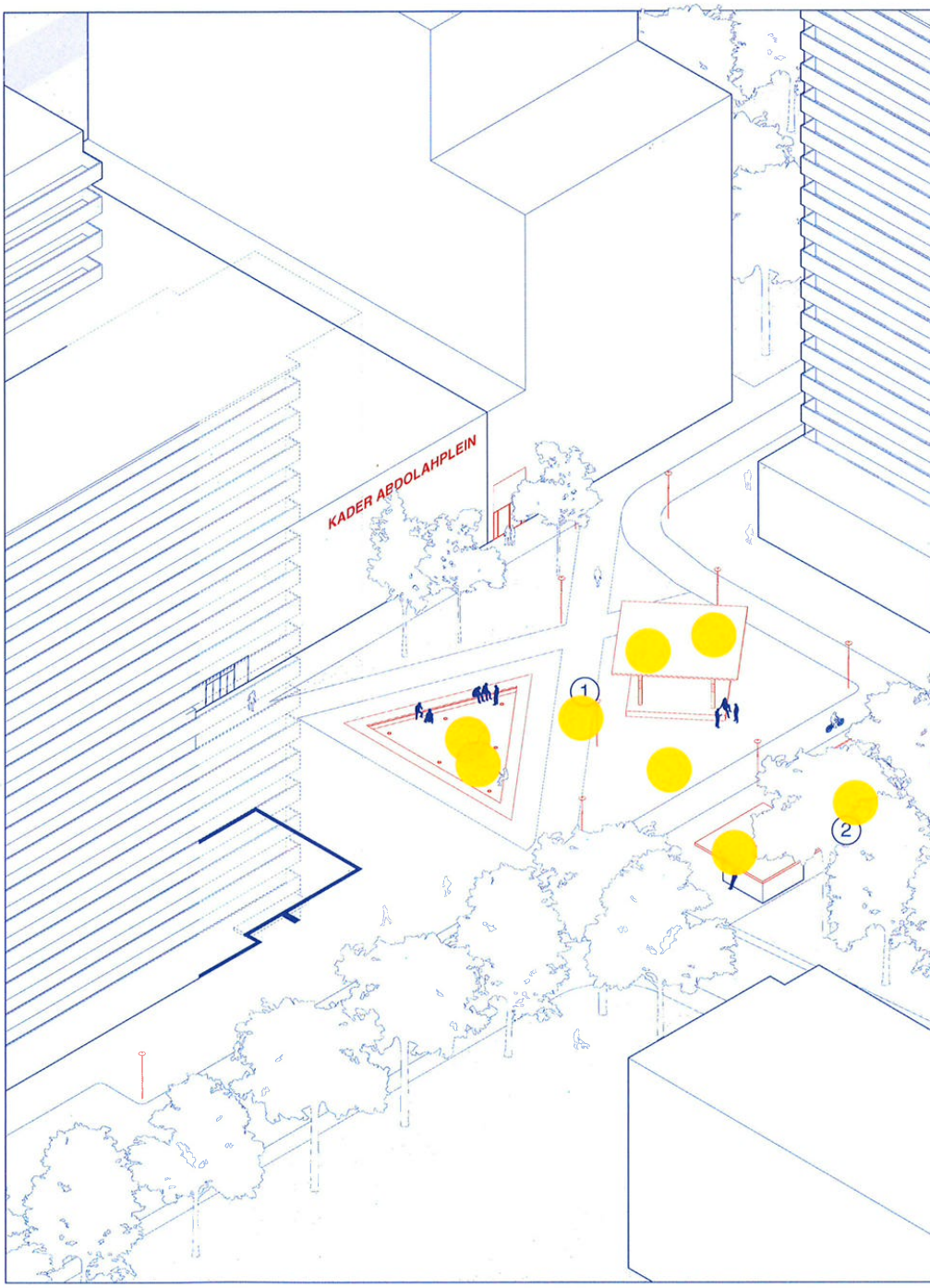
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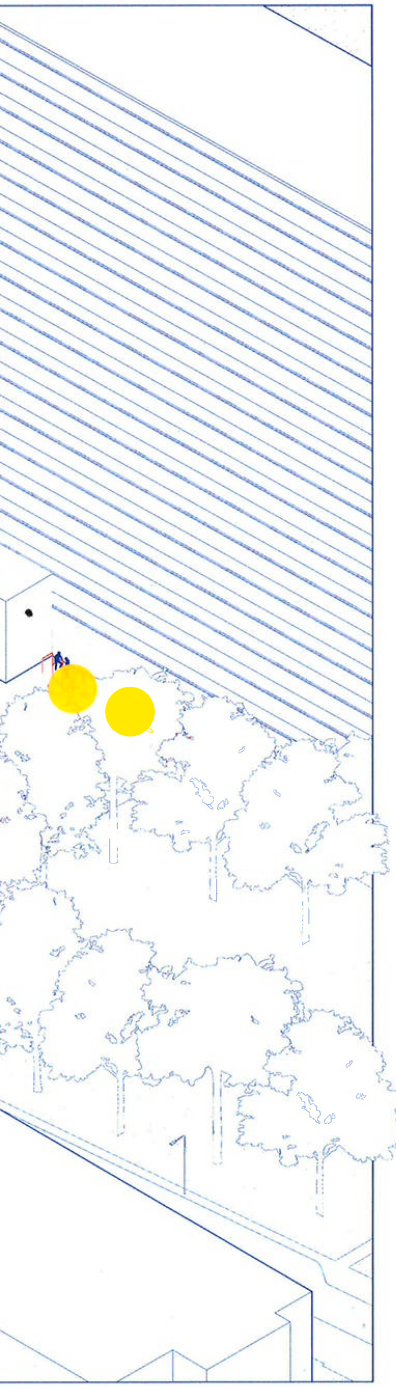

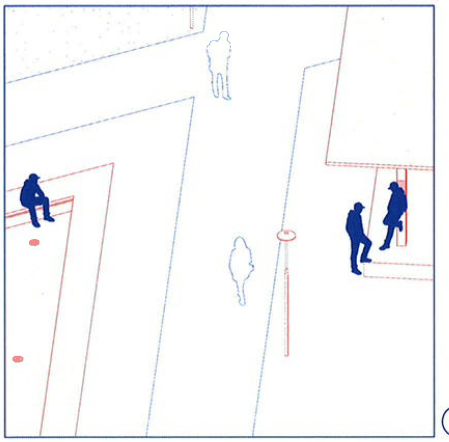

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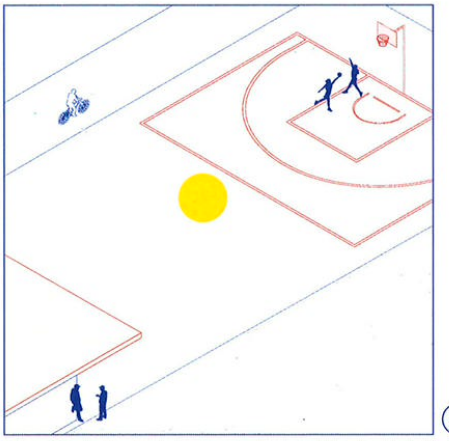

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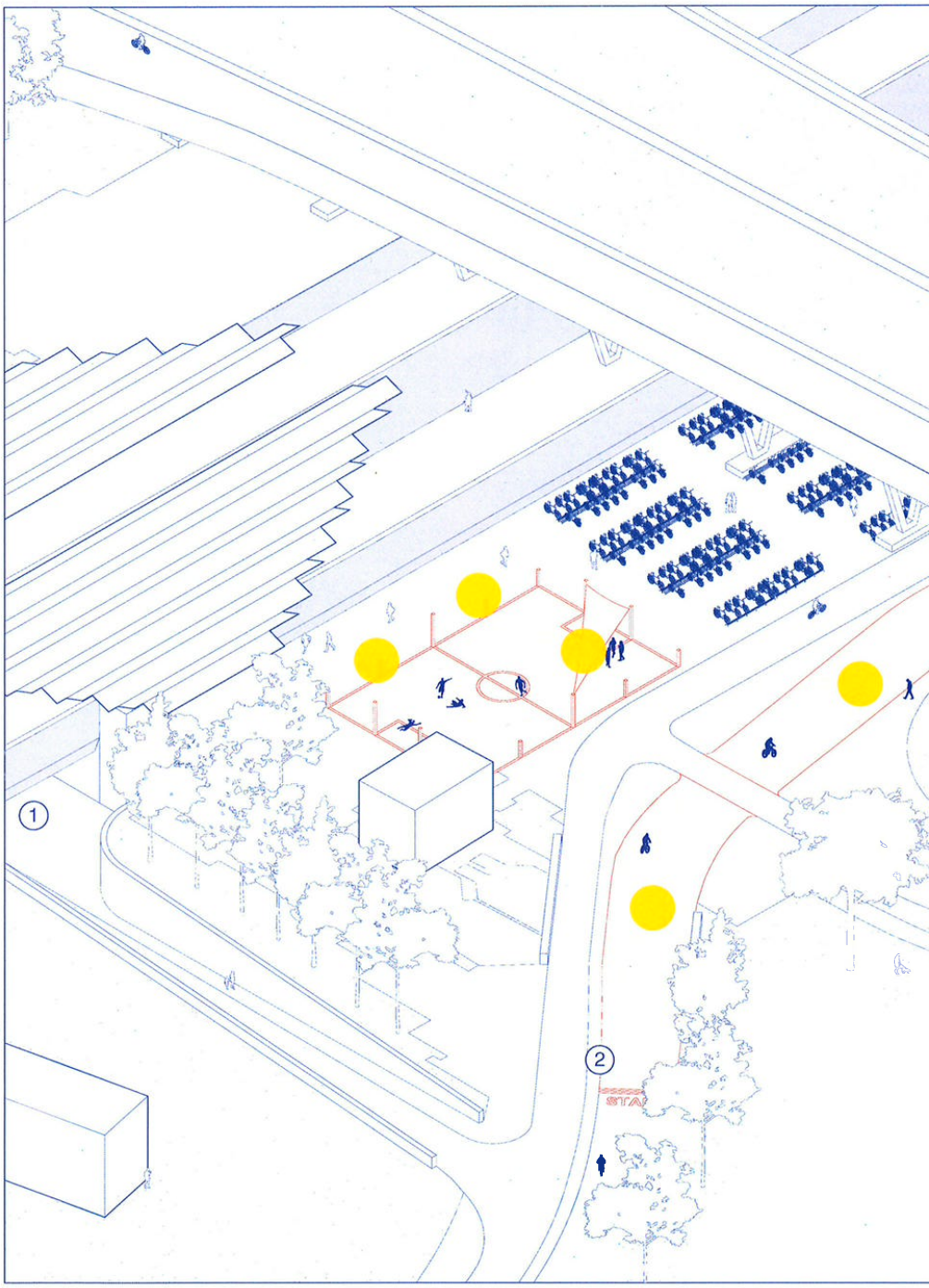
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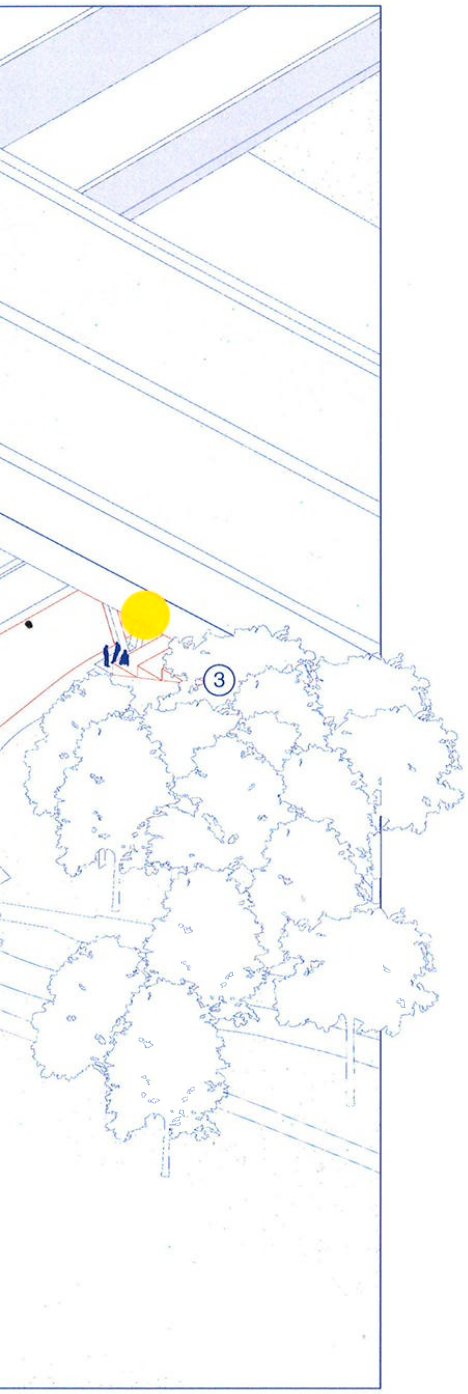
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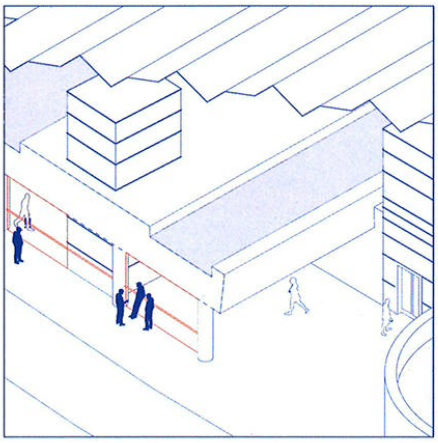
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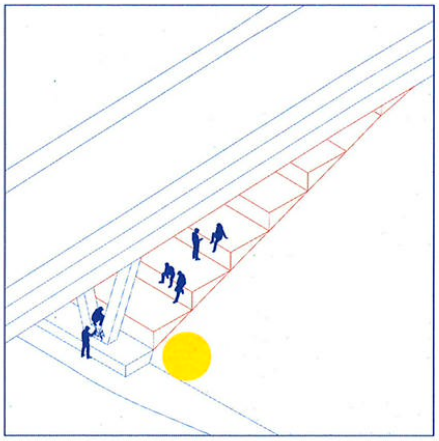
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