

LOCATION ANALYSIS TARWEWIJK

Zwartewaalstraat



Delft University of Technology
Master Architecture, Urbanism and
Building Sciences

Dwelling Graduation
Studio_AR3AD110
Designing for Health and Care in an
Inclusive Environment

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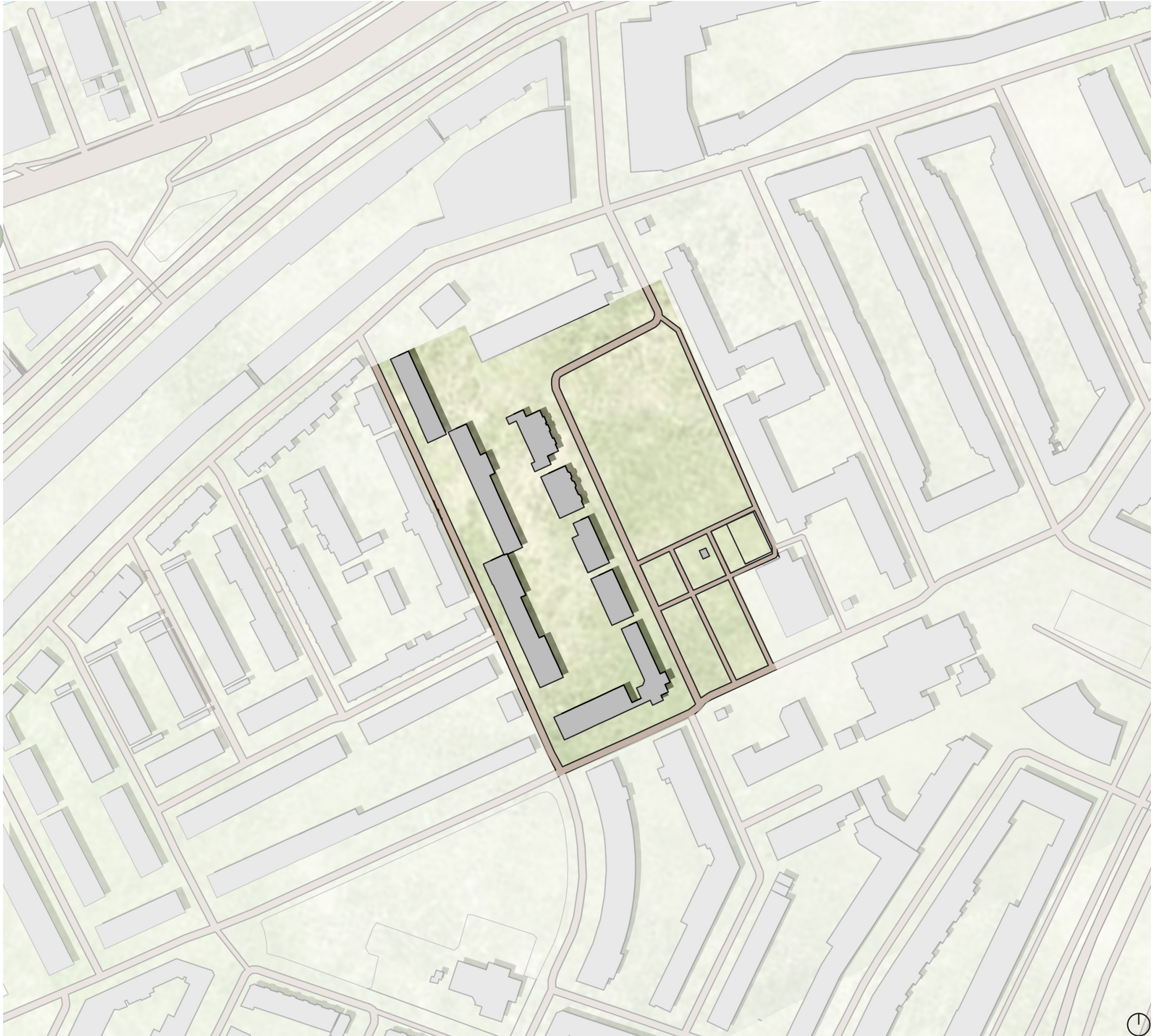
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Design site



Location choice

The location is centrally positioned within the Tarwewijk, offering several advantages for development. It is conveniently close to the only big supermarket in the neighbourhood, making it easily accessible for residents. The proximity to surrounding schools provides significant potential for engaging younger age groups, while its central position fosters opportunities for neighbourhood activities, helping to strengthen community ties. Additionally, the location is near the health center, further enhancing its accessibility for residents' daily needs.

Currently, the park in this area remains underutilized, yet it holds great potential for revitalization. The area has a relatively low score on the livability index, but with the right design interventions, its functionality, attractiveness, and vibrancy can be significantly improved.

Additionally, many of the houses in the area are outdated, built before 1945, and in need of modernization. Moreover, the presence of multiple other green parks nearby creates a broader network of recreational spaces that can complement this site's revitalization.

Overall, this location offers a unique opportunity for creating a more dynamic, functional, and connected community.



The location is centrally located in the Tarwewijk.



It is close to the only supermarket in the neighbourhood.



Due to the surrounding schools, there is a lot of potential in terms of younger age groups.



Its central location offers opportunities for neighbourhood activities.



It is close to the health center.



The park is currently underutilized.



The area has a low score on the livability index. But there is lot of potential to enhance its functionality, attractiveness, and overall vibrancy.



The houses are outdated, they are from before 1945.



There are multiple other green parks in the proximity of this location.

Amenities









All essential amenities are conveniently located within a 200-meter walking distance, ensuring easy access for people of all ages and mobility levels. This thoughtful layout is designed to accommodate the needs of elderly residents, families with young children, and individuals with physical disabilities, creating an inclusive and user-friendly environment for the entire community.

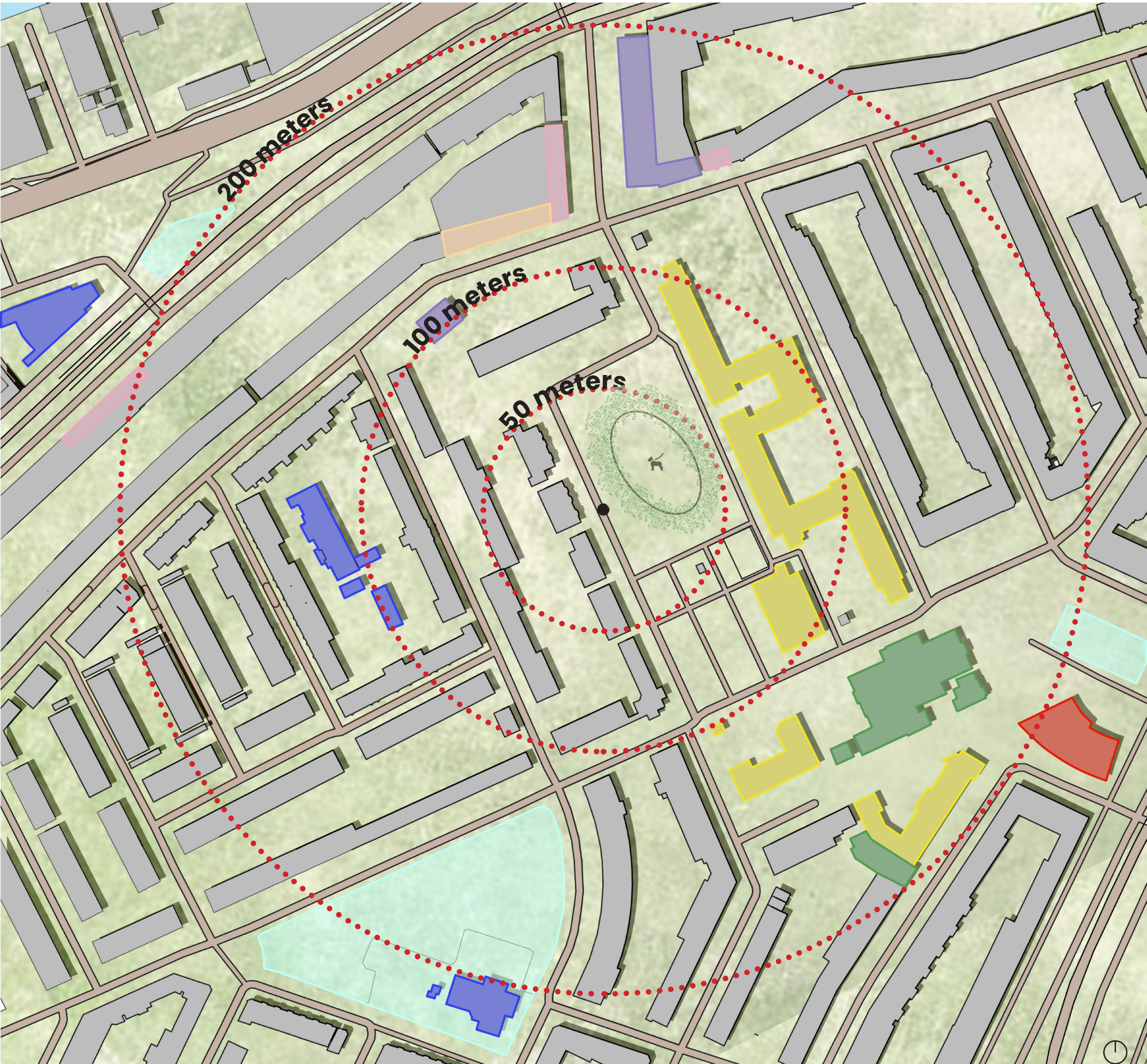
The proximity of these facilities encourages independence and supports healthier, more active lifestyles by reducing the reliance on vehicles for daily activities.

The walking distance to amenities fosters a sense of connection and convenience, contributing to a more sustainable and vibrant neighbourhood.

Key amenities within this accessible range include various schools, community buildings, a healthcare center, two supermarkets, diverse active plinths with retail and social spaces, children's playgrounds, religious facilities, and a car service location. This diverse program, combined with the short distances between amenities and the design location, not only enhances accessibility but also strengthens the sense of community, improving the overall quality of life for all residents.

Legend

	School		Active plinth
	Community building		Playground
	Health case center		Religion
	Supermarket		Car service



sightlines

A walk through the design location reveals the significance of proportions. You can sense how high a wall is, how far a path stretches, and how the shadows of trees fall across the ground. The interaction between buildings, greenery, and materials occurs not on paper, but in the lived experience of the person navigating the space. This experience is unique to each individual, but similarities can often be identified.

The tall trees surrounding the dog area of the park create a feeling of shelter and add a natural element. However, the created shadows can be perceived as unpleasant since recognising someone becomes harder.

Another notable feature on the location is the school. Its impressive height and distinctive architecture provide not only aesthetic value but also a social function. The school serves as a gathering place for many parents and children from the Tarwewijk, making it an important landmark in the community. As you walk by, the walls of the school leave a lasting impression with their height.

Both the presence of greenery and the stately architecture of the school are elements that nearly everyone will notice. They play a significant role in shaping how this space is experienced and appreciated.

During a site visit, two routes were mapped, and photos were taken to gain insight into people's perspectives. The routes are highlighted on the map.



1

This route follows the road separating the park from the housing located next to the park.

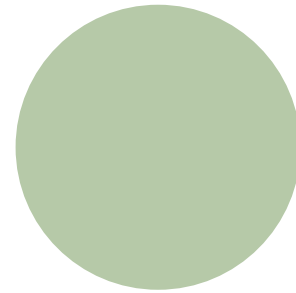
The park's paving consists of standard sidewalk tiles, which, while functional, lack character and fail to enhance the park's aesthetic appeal. Opting for more inviting materials, such as decorative or permeable paving, could create a unique and attractive experience.

Car traffic heavily influences the park's atmosphere. The road between the housing and the park acts as both a physical and visual barrier, limiting accessibility and creating an enclosed, less inviting environment. To enhance accessibility and improve safety, removing the road entirely could help integrate the park more seamlessly into the neighbourhood.

The park's greenery is its strongest feature. The tall trees provide shade, improve air quality, and help alleviate the Urban Heat Island effect during summer months. This abundance of greenery offers a calming, refreshing contrast to the surrounding urban landscape, making the park a valuable asset to the community.

However, the park's design presents usability challenges. The centrally located dog park appears underutilized, possibly due to its size, design, or lack of amenities. A redesign that incorporates more appealing features, such as agility equipment or seating for pet owners, could encourage greater use.

Another limitation is the uneven distribution of seating areas. Currently, benches are clustered in two specific areas, leaving large sections of the park without seating options. Spreading benches more evenly would provide better opportunities for rest and encourage visitors to explore the park.



2

This route runs along an access road in the Tarwewijk, located to the south of the design location.

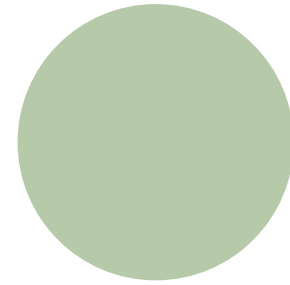
Similar to Route 1, the paving consists of standard paving stones. While functional, they lack character. However, the presence of tall trees along the route is a notable positive, offering shade and enhancing the street's visual appeal. Despite this, the overall streetscape remains heavily dominated by cars, detracting from the pedestrian experience.

The route begins at the brick facades of the school and passes by one of its schoolyards. The yard is enclosed by a brick wall that separates it from the public space. What sets this wall apart is its distinctive brickwork, featuring small openings. These subtle gaps establish a visual connection while maintaining a sense of privacy, making the schoolyard feel like a secure courtyard that is still partially integrated with the Neighbourhood.

The sidewalk along this route is wide, which significantly improves accessibility. Pedestrians, including those in groups or with mobility aids, can navigate comfortably, making it an inclusive space.

One key observation is the route's connection to the playground, a popular and frequently used site in Tarwewijk. Although this route provides a functional link between the design location and the playground, it lacks a clear visual or green connection to tie the two areas together.

By incorporating cohesive design elements—such as consistent greenery, wayfinding markers, or visual cues—this route could become a more attractive and intuitive link between key spaces in the neighbourhood.



Heights

The design location is nestled within a diverse urban environment characterized by a striking variation in building heights, ranging from 2 to 30 meters. On the northern side, a 30-meter-tall structure stands as the tallest building in Tarwewijk, serving as both a visual landmark and a key reference point for orientation.

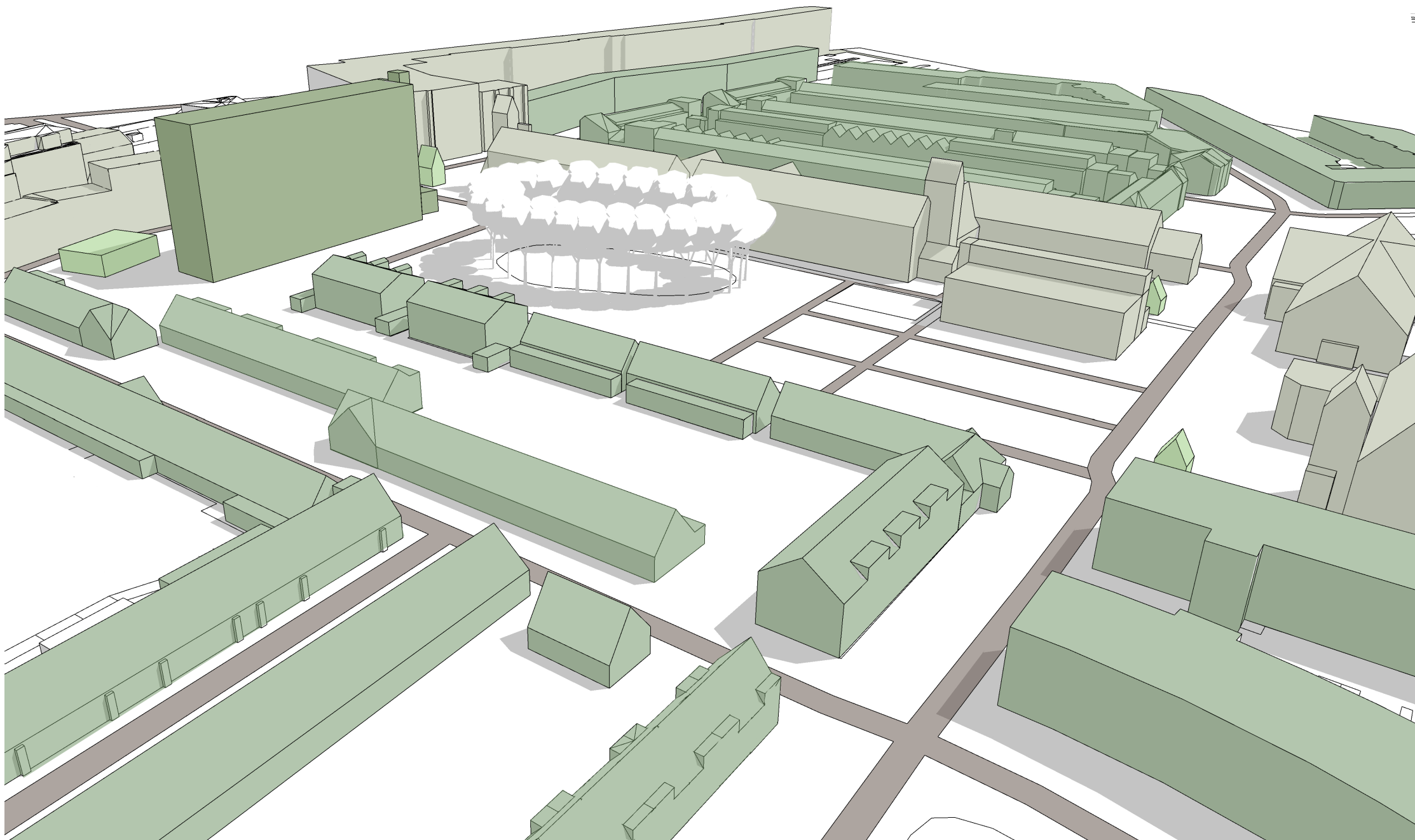
Surrounding this towering structure is a mix of buildings with heights between 2 and 15 meters. This variation creates a dynamic and visually engaging streetscape, where the interplay of heights adds depth and rhythm to the urban fabric. The contrast between low-rise and mid-rise buildings fosters a sense of scale that balances the monumental nature of the tallest building while maintaining a human-centered atmosphere at street level.

The juxtaposition of building heights also has functional implications. Taller buildings cast shadows that can create cooler zones in warmer months, while shorter structures allow more light to reach the street level, promoting a lively and inviting atmosphere. Thoughtful integration of greenery, such as tree-lined streets or vertical gardens, could further enhance this dynamic by softening the visual impact of height disparities and improving microclimatic conditions.

By carefully considering these architectural and spatial qualities, the design location has the potential to harness its diverse surroundings to create a cohesive and engaging urban environment that balances functionality with aesthetic appeal.

Legend

- 0-5 meters
- 5-10 meters
- 10-15 meters
- 30 meters




Sun & Wind

The sunpath of the location plays a crucial role in designing. The sun rises in the east and sets in the west, but the exact path it follows changes throughout the year due to the tilt of the Earth's axis. In the summer, the sun takes a higher, more direct path across the sky, while in the winter, the sun follows a lower, more angled path. Understanding this movement is essential for optimizing natural light and managing heat gain and loss in buildings and outdoor spaces.

The wind direction has predominantly been from the south-southwest, as shown in the wind rose for the period 1998–2018. This wind rose illustrates the distribution of wind strength by direction, with colors indicating different wind speed classes and the length of the spokes representing the frequency of wind strength per direction.









When projecting the wind rose onto the design location, several key observations become apparent. The wind primarily originates from the direction of the playground, allowing it to gain speed across the large open field. If these wind conditions are not considered, there is a risk of creating a wind tunnel effect, which could negatively impact the comfort and usability of the space. Addressing this potential issue is crucial in the design process to ensure a comfortable, livable environment for users.

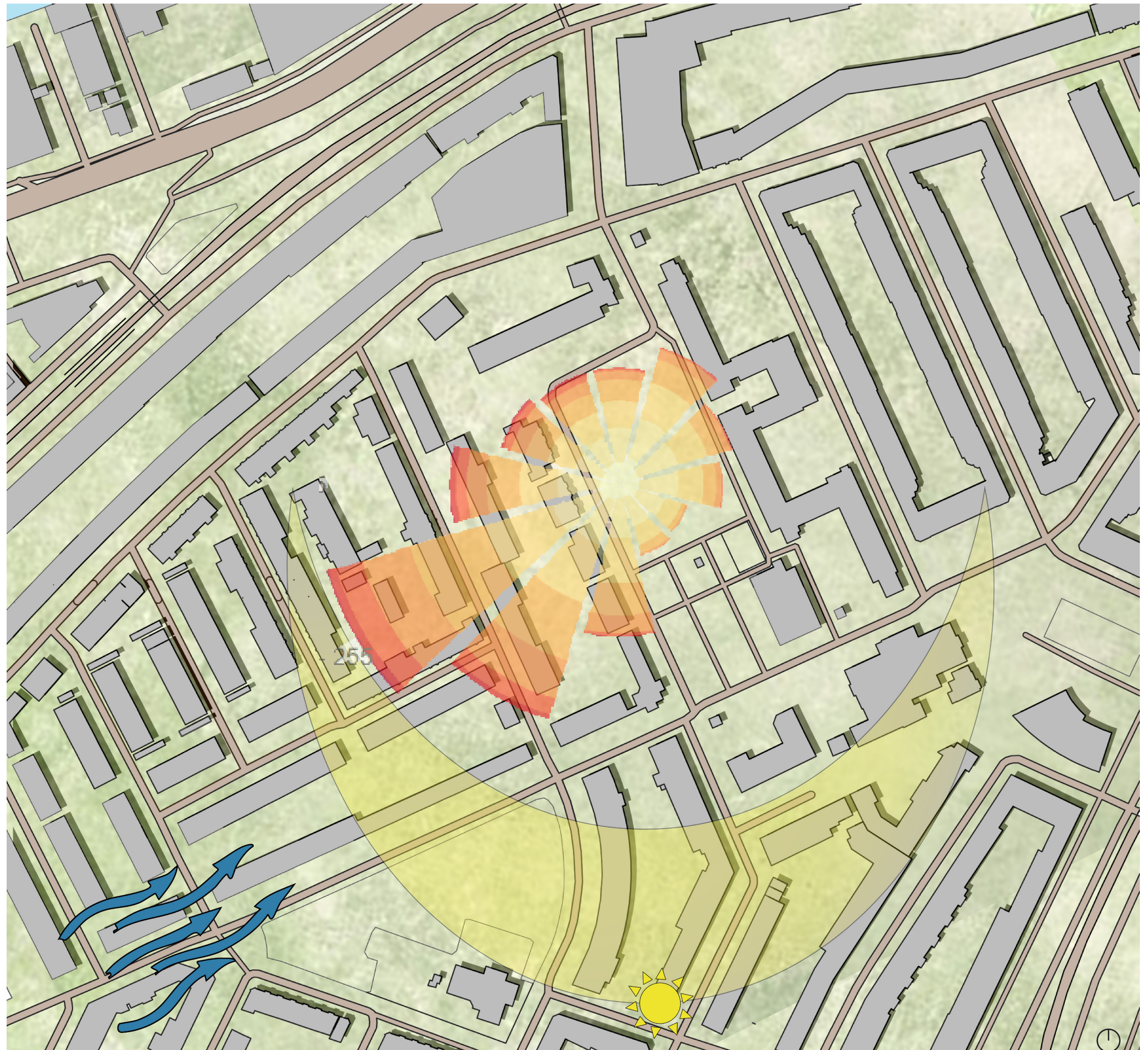
Legend

 Sunpath  Wind rose

 Wind direction

Legend - wind rose (m/s)

 18 - 20	 8 - 10
 16 - 18	 6 - 8
 14 - 16	 4 - 6
 12 - 14	 2 - 4



Façades

The design location is framed by four iconic buildings, each contributing to the area's identity and leaving a lasting visual impression. The façades of these structures play a key role in defining the overall atmosphere and recognizability of the space, thanks to their thoughtful architectural designs and material choices.

One of the standout features of the streetscape is the extensive use of brick across the façades. This shared material palette fosters a sense of cohesion and harmony among the buildings, providing the area with a timeless and grounded aesthetic.

Two of the four buildings are schools distinguished by their striking sloping roofs, covered with red façade tiles. These roofs not only add texture and color to the streetscape but also create a visual contrast with the brick façades, balancing warmth and boldness. The red tiles bring a lively, inviting quality to the architecture, while the sloping design lends the buildings a classic, almost domestic feel. This human-scale approach enhances their approachability, making them feel both familiar and iconic within the urban setting.

The recognizable silhouettes of the sloping roofs contribute to the area's visual identity, serving as landmarks that reinforce the neighbourhood's character. The interplay of the roofs' angles and the solidity of the brick façades creates a dynamic yet cohesive architectural dialogue, ensuring the buildings remain memorable while complementing their surroundings.

Together, these structures not only define the physical environment but also shape the cultural identity of the location, making it a space that resonates with both residents and visitors. Future developments in the area could draw inspiration from this blend of traditional materials and human-centered design to maintain and enhance the neighbourhood's unique charm.



1

RESIDENTIAL APARTMENTS ZWARTEWAALSTRAAT

This gallery flat, built in 1957, is a typical example of reconstruction architecture in the Netherlands, designed to efficiently create living space after the Second World War. Standing at 30 meters high, it serves as an important landmark in the Tarwewijk Neighbourhood.



(Vastgoedveiling B.V., 2024)

2

NATIONAL MONUMENT SCHOOL ZWARTEWAALSTRAAT

The school complex on Zwartewaalstraat, built in 1928 and designed by architect A. van der Steur, is a national monument of significant architectural and cultural-historical value. It is an example of the complex school type from that era. Notable features include the brick facades, gable roofs with red tiles, wooden window frames with original battens, and gabled gables with inset gable roofs. The elegant detailing, such as the brick water sills with protruding corner stones and wooden box gutters, highlights the craftsmanship of the construction.



(bbn adviseurs, 2024)

3

SCHOOLGYM "TARWESTERK"

The school gym, completed in 2015 and designed by Artesk van Royen Architecten and Ziegler|Branderhorst, consists of three distinct volumes: a box-shaped main structure that houses the gym and changing rooms, a taller disk that serves as the entrance, and a lower storage area that connects to the playground. Along with a smaller building, this storage space creates a gateway to the school grounds. The design features light masonry and a richly detailed façade with deep-set windows, which add rhythm and expression to the facade.



(Architectenweb, 2016)

4

CBS ELOUT VAN SOETERWOUDESCHOOL

This school, constructed between 1920 and 1945, features a red brick facade with a roof made of red tiles. This combination of brick and tiles was typical of schools built during this era.



(Google Earth, 2024)

Greenery

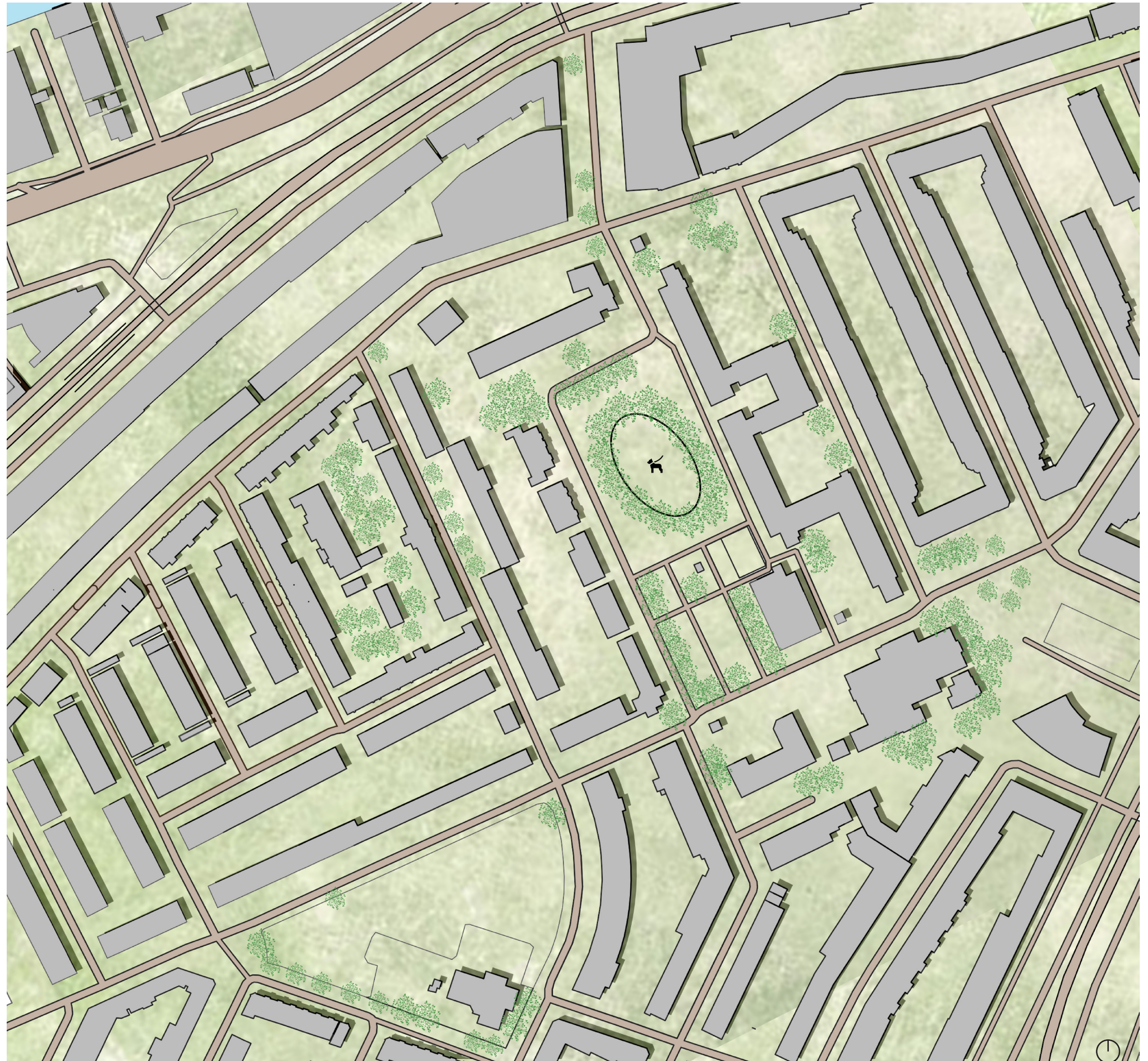
The design location is characterized by an abundance of greenery, which plays a crucial role in enhancing the quality of life for its residents. The area is home to many elm trees, reaching heights of 10 to 15 meters. These mature trees provide a visually appealing landscape and create a cooler environment during the summer months through their shade-providing canopy. This shading effect contributes significantly to reducing the urban heat island effect, a challenge that cities like Rotterdam increasingly face due to climate change and urbanization.

Green spaces are vital for mental well-being, as they offer residents a calm environment and opportunities for recreation. When planning for interventions on the site it is crucial to maintain the current level of greenery, ensuring that the ecological and aesthetic quality of the area remains intact. By preserving and potentially enhancing the existing green cover, the design respects the community's need for access to green amenities, which are known to support mental health and foster a sense of connection to nature.

The dog area of the park occupies a substantial portion of the space, covering approximately two-thirds of the park, and is enclosed by fencing to ensure safety for pets. Its entrance, located on the north side, is the sole access point. Surrounded by tall trees, the area offers shade, creating a calm and natural setting. While this provides relief during hot days, the dense tree cover also makes the space darker and less welcoming, especially during overcast weather or evening hours.

Despite being one of the few designated spaces for dog owners in the Neighbourhood, the area is rarely used. Its size contrasts with its underutilization, suggesting a need for improvements. The secluded location and lack of visibility from other parts of the park may contribute to perceptions of isolation or safety concerns. Enhancing visibility by thinning tree cover, adding lighting, or incorporating benches and amenities for dog owners could encourage greater use.

As it stands, the dog area remains a valuable resource for urban pet owners, combining functionality with the park's natural charm but requiring updates to fully realize its potential.



LOOKING AROUND

The tall trees and neatly trimmed hedges along the edges create a natural boundary that encloses the space. Fallen leaves scattered across the ground add a seasonal charm, enriching the atmosphere with a sense of change and tranquility. However, the view is contrasted by the presence of many parked cars along the streets, and the hard, gray pavement tiles and red street bricks give the area a distinctly urban feel.

LOOKING IN

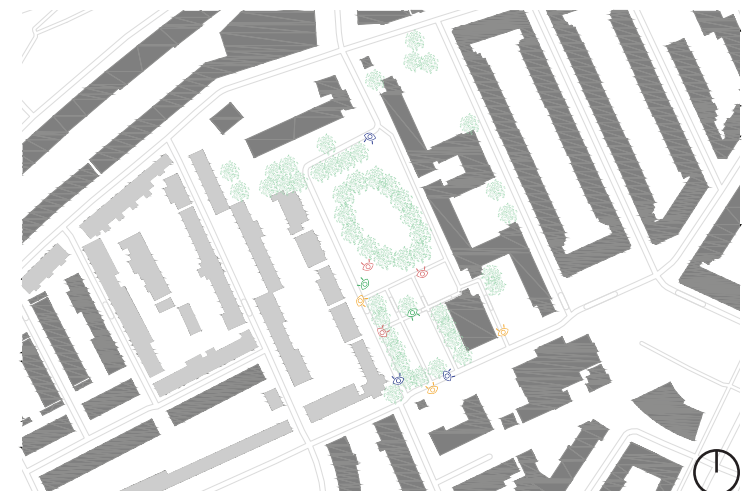
Inside the park, contrasting elements become apparent. Vandalism, such as graffiti on the electricity unit, introduces a sense of neglect. The smaller street entrance evokes curiosity and a feeling of stepping into the unknown, while the park's openness provides a clear overview of its layout, offering a sense of safety and familiarity.

LOOKING THROUGH

The dense tree canopy and abundant shade create pockets of obscurity, particularly in the dog area, which becomes a shadowy spot where its use is not immediately apparent. This interplay of light and shade adds visual depth and a sense of mystery to the park but can also reduce visibility and diminish the perception of activity and interaction in certain areas. Nonetheless, the presence of fixed objects such as benches and a ping pong table offers inviting spaces for rest, recreation, and social interaction, encouraging opportunities for community engagement.

LOOKING OUT

The view from the park reveals the surrounding urban environment. The diversity in housing styles reflects the Neighbourhood's character, while the trees along the edges soften the boundary between the built environment and the green space. This layering of natural and urban elements frames the park as a dynamic interface between the community and nature, offering both a retreat and a connection.



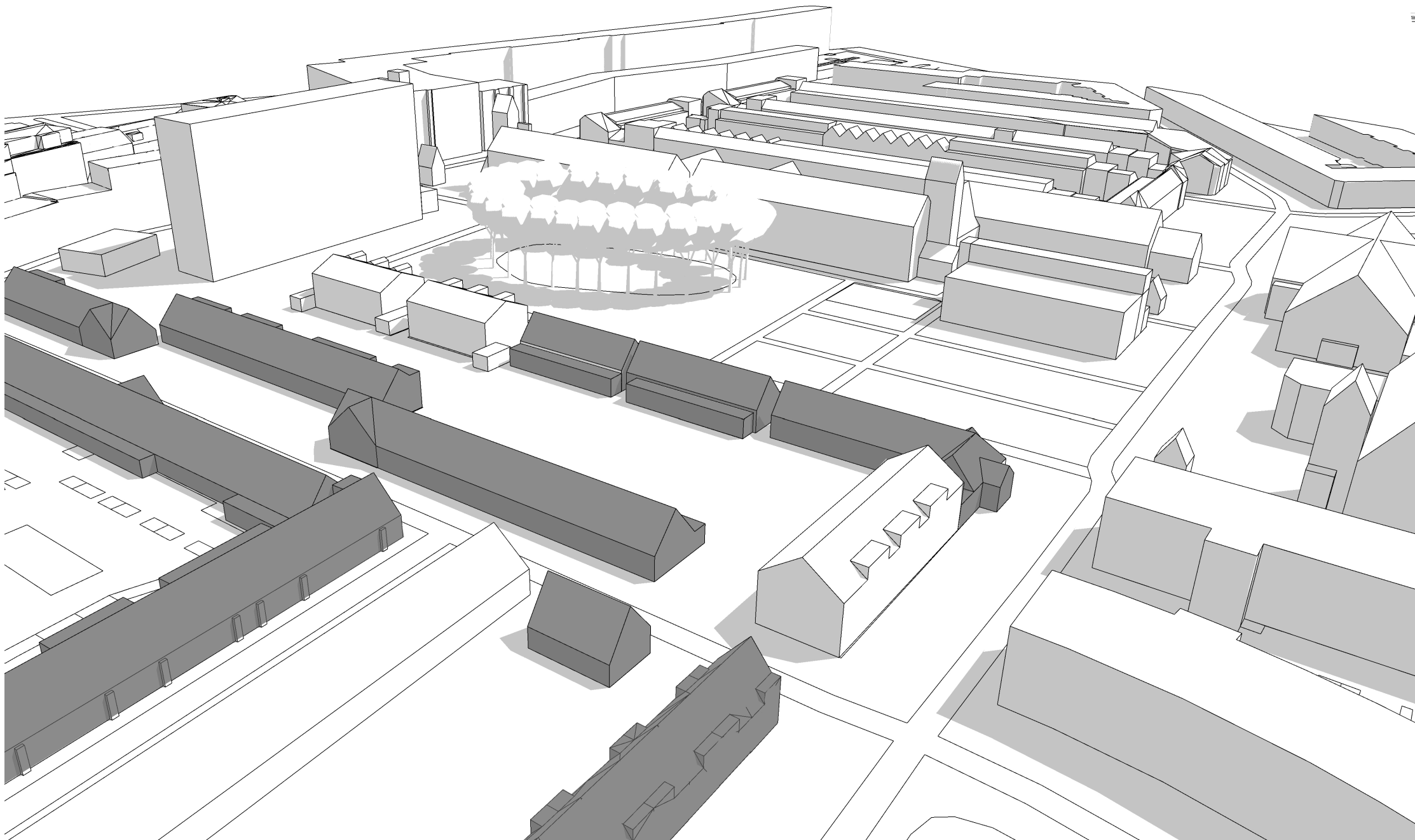
Demolition

According to the current demolition plans developed by the Rotterdam Municipality, the existing building line along Zwartewaalstraat will be preserved, ensuring a seamless continuity with the current streetscape. This approach maintains the established rhythm and character of the street, preserving the neighbourhood's historical context. However, on Polslandstraat, the housing layout will undergo a reimagining, diverging from the current configuration to create more modern, functional spaces that better meet the needs of the community.


The adjacent dog park will continue to serve its current function, but it remains an underutilized space within the neighbourhood. This underuse presents a significant opportunity for transformation.

By rethinking the park's design and integrating it with residential buildings or community facilities, the area could become a vibrant focal point of the neighbourhood. This dynamic mix of park space, housing, and community-oriented facilities could provide both recreational opportunities and a sense of shared space, fostering a stronger sense of community and improving the overall quality of life for residents.

The potential for reimagining this park and its surrounding area could significantly enhance the functionality and appeal of the neighbourhood, creating a more active, connected, and engaging environment for all.



Legend

 Will be demolished

New plans

The municipality's future plans for the Tarwewijk are closely integrated with its existing urban fabric, as demonstrated in the plan and 3D bird's-eye view. These plans focus on subtle enhancements rather than large-scale changes. While there are some adjustments in housing types, such as the introduction of more diverse options to suit evolving needs, and minor shifts in building lines to improve accessibility and circulation, no major transformations are anticipated.

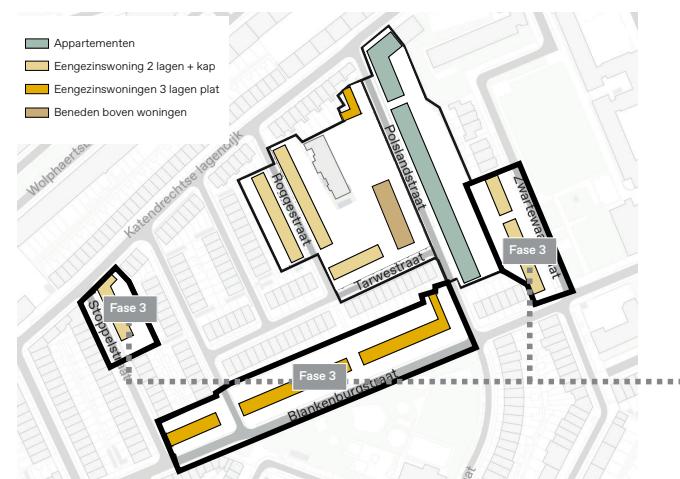
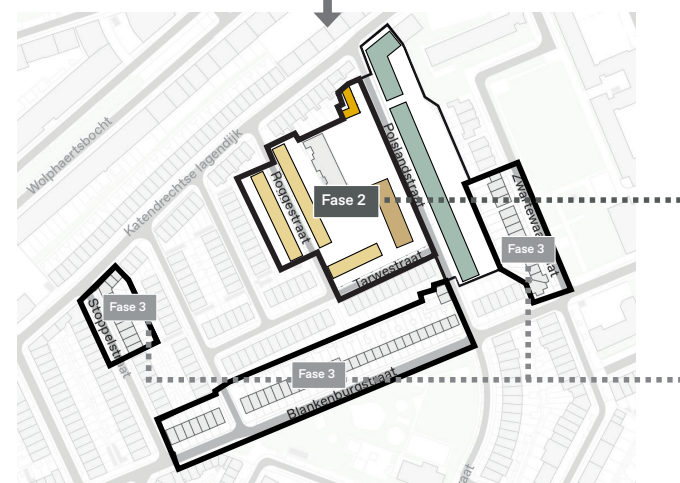
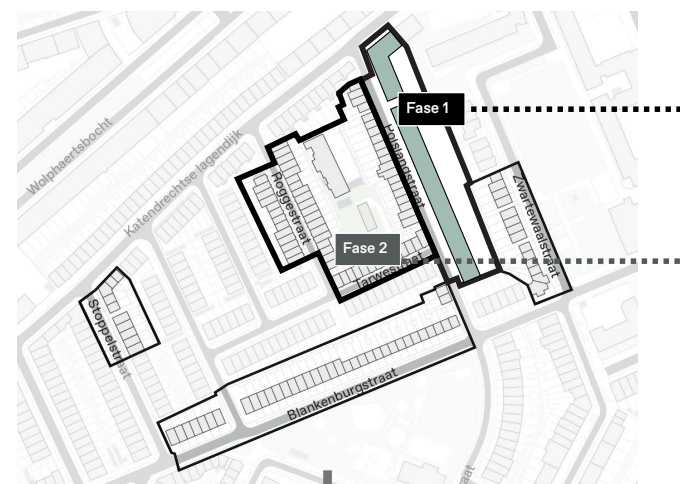
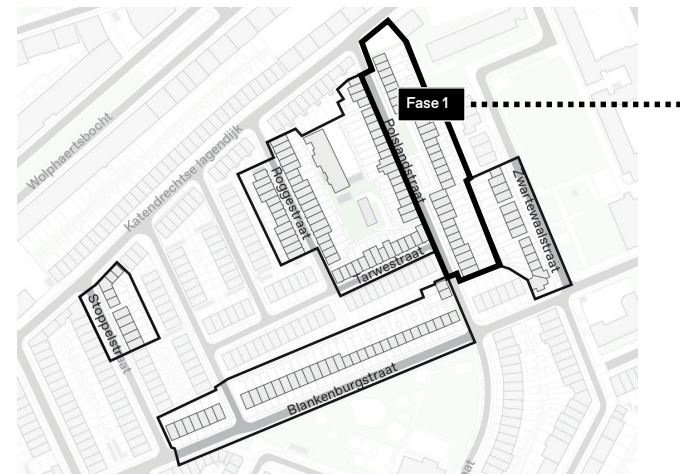
The area will preserve its characteristic small-scale residential buildings, maintaining its intimate, neighbourhood feel without the introduction of large housing complexes or sprawling developments.

For the dog park, situated to the right of the proposed building changes, no changes are planned. The main function will continue to serve as a green space for the community.

The demolition of certain houses is primarily driven by their advanced age and deteriorating structural conditions, which make them unsuitable for modern living standards. While the redevelopment plans aim to preserve the historical character of the neighbourhood, the selected buildings for demolition will make way for new, more sustainable housing options. The plans are set to commence in 2027, with the goal of completion by 2031, marking a thoughtful evolution of the area while retaining much of its unique charm.

Legend

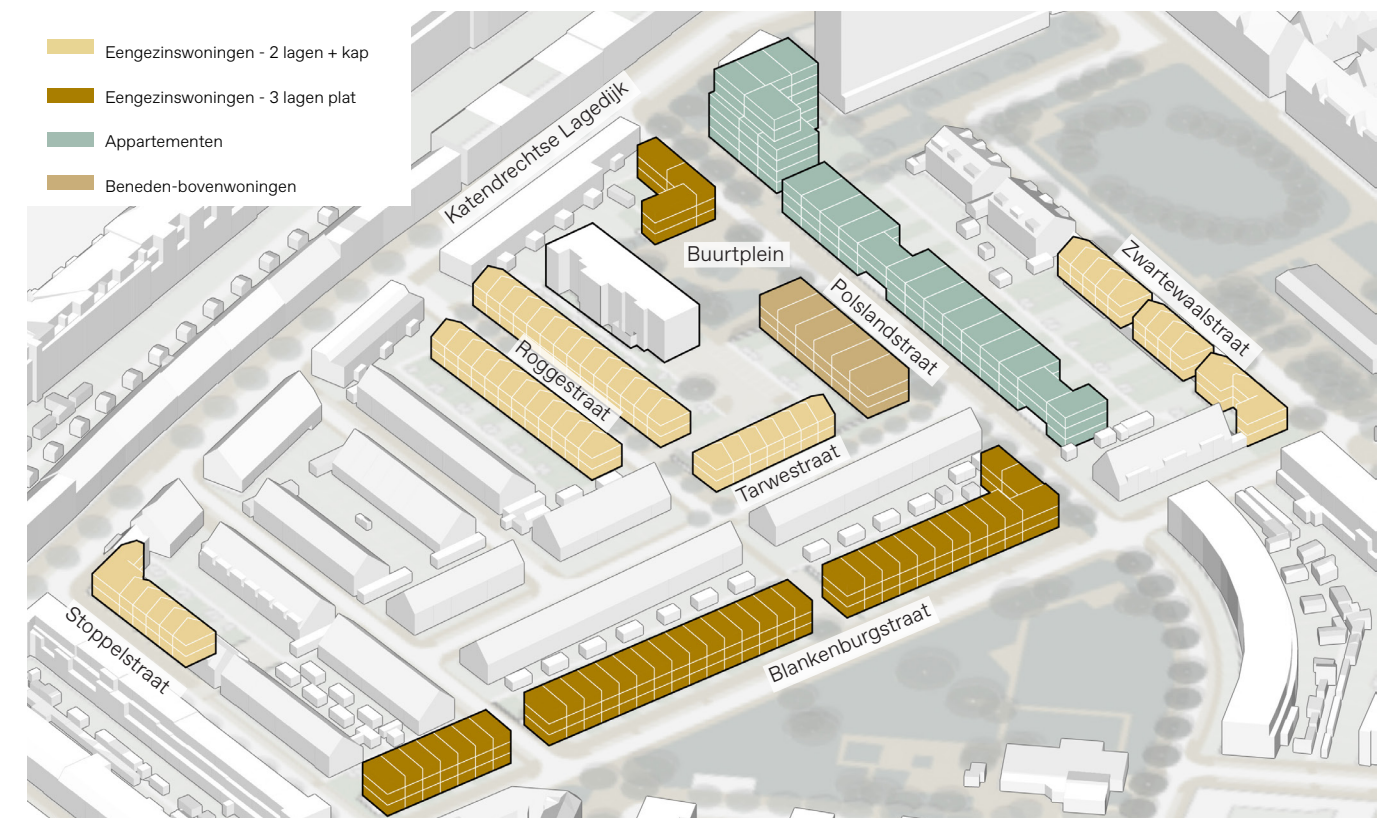
- single-family homes, 2 layers with roof
- single-family homes, 3 layers with flat roof
- Apartments
- Ground or first floor homes



(Woonstad Rotterdam, 2023)

04/09/2023

Vernieuwing Tarwebuurt - Eerste schets



(Woonstad Rotterdam, 2023)

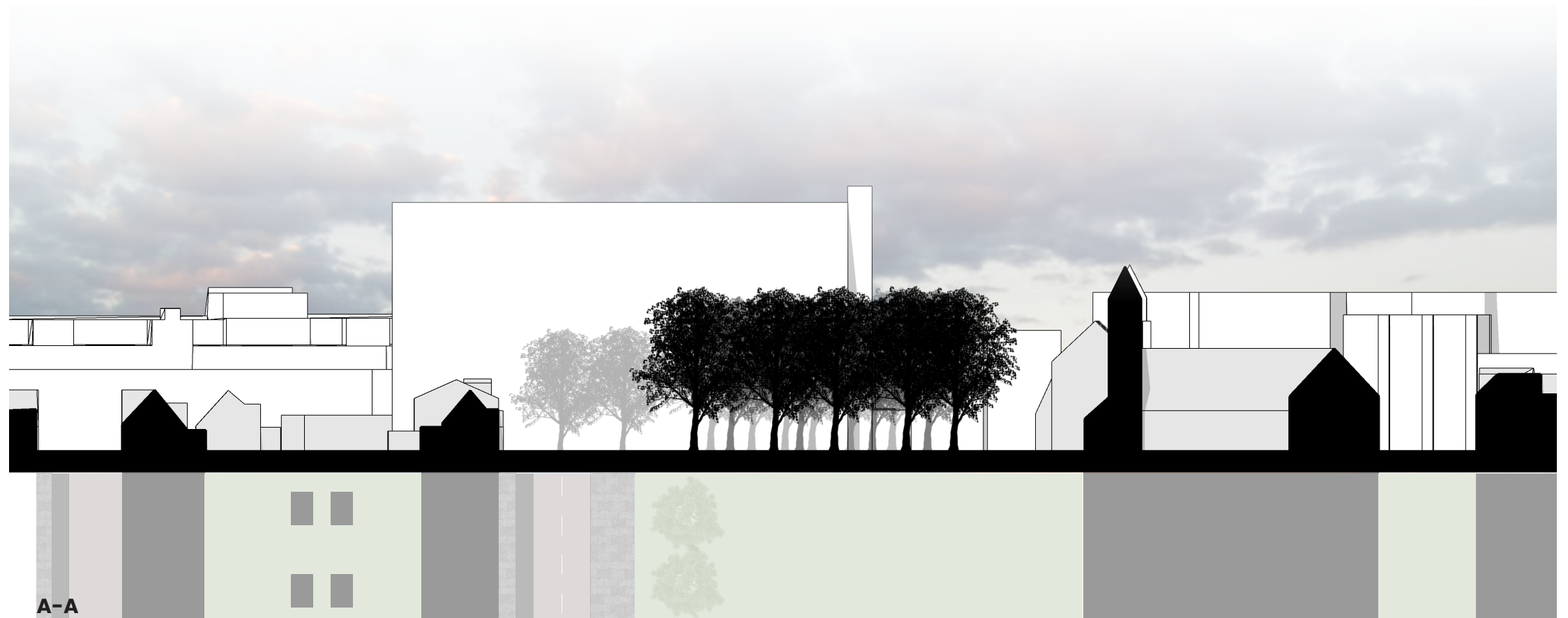
sections

On the location, the varying building heights play an important role in shaping the overall landscape and atmosphere. The park is notably wide in relation to the surrounding areas, offering a spacious and open environment inviting social interaction and gathering. Therefore, the green space provides an opportunity for people to come together, serving as a focal point in the community.

Section A-A reveals that the tree heights in the park exceed the heights of the surrounding buildings, creating a natural canopy that enhances the sense of openness and connection to nature. In

contrast, the flat stands out as the tallest and most dominant building, creating a visual contrast with the surrounding structures. The road separating the housing from the park creates a clear boundary, which impacts the sense of continuity between the residential areas and the open space.

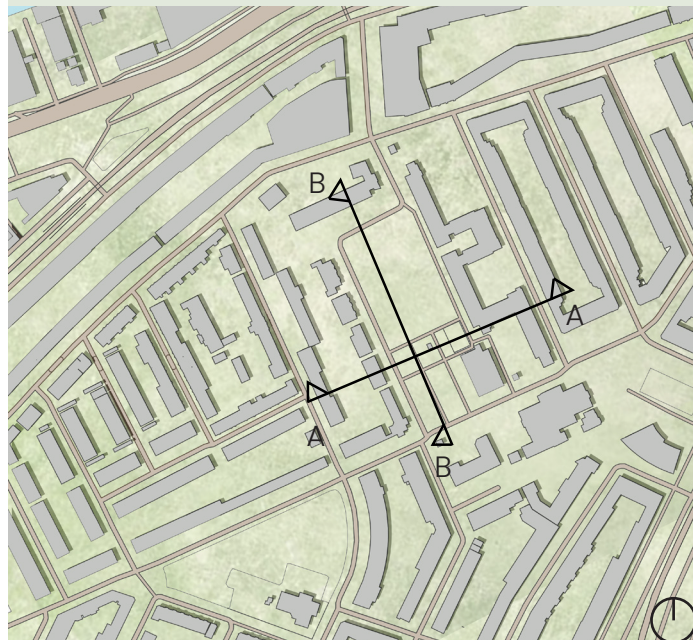
Section B-B demonstrates that the trees surrounding the dog park are planted very close to one another, creating a dense and enclosed feeling. While this arrangement is beneficial for shade, it could be perceived as negative for recognizing people. The barrier between the street to the south and the location is created by shorter trees, which offer a softer visual transition but may not fully mitigate the impact of the busy street. The prominence of the flat building's height remains visible in this section as well, highlighting the need to consider the human scale in the design to ensure that the space feels approachable and inviting.



A-A



B-B



Guidelines

The guidelines aim to establish a sustainable, inclusive, and lively neighbourhood that encourages social interaction, harmonizes with the existing environment, and reflects the architectural character of the area.

When integrated with the design principles outlined in the master thesis, these guidelines will provide a comprehensive framework for exploring diverse design possibilities.



Community and Commercial Integration

The area lacks social gathering spaces such as cafés or large restaurants, and currently, there is only one commercial supermarket. The new design should prioritize creating accessible and inviting communal spaces that serve as connection and meeting points for the entire neighbourhood.



Accessibility and Inclusivity

Existing community buildings have a high threshold for access due to closed-off fences and hidden locations. The new design should focus on openness and inclusivity, ensuring spaces are welcoming and easily accessible.



Walkability

The health center, located within 200 meters, is sufficient for the area, so no additional health facilities are necessary.



Building Height

The height of the buildings should harmonize with the surrounding low-rise Neighbourhood. While a slightly higher structure to meet modern standards is acceptable, the design should not exceed five stories.



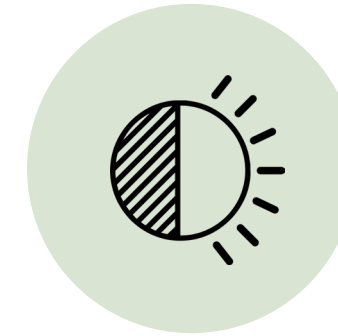
Scale and Aesthetics

The neighbourhood predominantly features brick façades and sloped roofs, which can serve as inspiration for the architectural design to ensure the new development integrates seamlessly with the existing character.



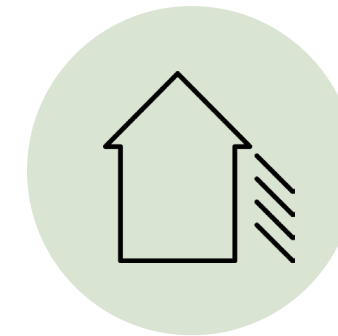
Preservation of Green Spaces

The existing oval dog park, with its mature trees, must be integrated into the design. Consider removing the three additional rows of houses not included in the current municipal demolition plans to allow for a more comprehensive and cohesive Neighbourhood redevelopment.



Outdoor Spaces

Outdoor areas should offer both sunny and shaded spaces, ensuring comfort for all users. Balconies should ideally face west and east to prevent overheating during the summer months.



Minimize Shadows

The design must minimize shadows cast on other buildings to maintain a pleasant environment. There should be a smooth transition between public and private outdoor spaces to encourage interaction while preserving privacy.



Traffic and Accessibility

Transform the Zwartewaalstraat into a car-free zone to enhance pedestrian safety and reduce noise. The Blankebergstraat and Polstrandstraat should serve as the primary access streets, with parking facilities provided along these roads.

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Delft University of Technology
Master Architecture, Urbanism and
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Dwelling Graduation
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Inclusive Environment

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