FIT

through architecture

This project strives for social cohesion between young people, which will result in a healthy neighborhood in the future. In this document the neighborhood that will be focused on is Tilburg-North.

This essay describes a research of the lifestyle of young people between 12 and 18 years old, **the next generation**, in the Tilburg-North. The analysis of the results shows the bad relations between the neighborhood and the city center and between the neighborhood and the rural area.

The project introduces the concept, The Missing Link. This concept stimulates **social interaction** through various interventions spread throughout park, centrally located in the neighborhood. The interventions stand out and give Tilburg-North the distinct identity that it is lacking, which is done by engaging the public directly through supporting a wide range of activities for the users of the public spaces.

The Missing Link **modestly** adapts the lifestyle of the young people. It encourages young people to become **physically active**. In addition, the design responds to **education**, **safety** and knowledge of **healthy food** for young people.

SOCIAL PROBLEM

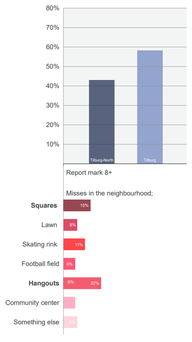
Almost 55% of adults and 20% of young people (age 12 to 18) in the Netherlands are either overweight or obese; these percentages are pretty similar across the country. Obesity is a significant risk factor for several diseases, such as type 2 diabetes, cancer and heart disease. It can also affect people's self-esteem and mental health. Therefore, reducing obesity, especially for children, is a priority for The Ministry of Health, Welfare and Sport (HWS) and health agencies across the Netherlands. The Ministry of VWS encourages people to adopt healthy lifestyles: to exercise more and keep a balanced diet. The ministry has drawn up a National Prevention Agreement to improve health in the Netherlands.

Architecture can reduce overweight in the deprived neighborhood Tilburg-North in the Netherlands.

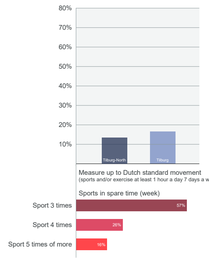
LIFESTYLE, YOUNG PEOPLE

Deprived neighborhoods are usually quite culturally diverse. Every cultural group has its rituals. The living patterns of many adults are based on the rituals of their own culture and are seldomly open to change. The future of the neighborhood is in the hands of the young people. The focus must be on the young people of Tilburg-North, because they are the future of the neighborhood. Young people are more willing to adjust their living patterns. Motivational and challenging new lifestyles invite young people to share them with their families. Parents and perhaps grandparents are willing to adjust their living patterns if their children share their knowledge motivationally. The newly acquired living patterns will more easily be passed on to the next generation.

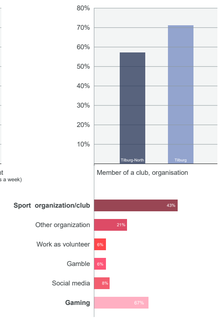
Neighbourhood



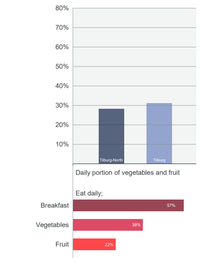
Exercise



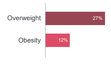
Spare time activity



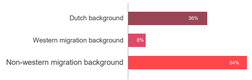
Nutrition



Overweight

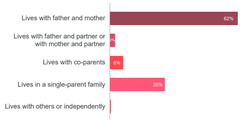


Background characteristics



Education

Family situation

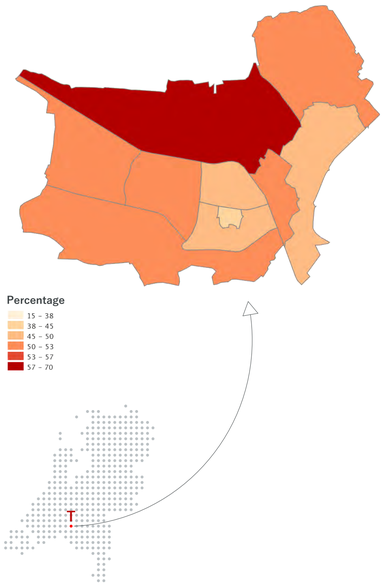


LOCATION

The Netherlands has groups of residents that profit less from our welfare state. They are not economically independent or do not take an active part in society.

The causes of rapid increases in the levels of obesity are complex, and the influence of the environment where people live is one of the factors.
These factors can be exacerbated in deprived areas. For example, children living in the most deprived areas are twice as likely to be obese as children living in the least deprived areas.

An example of a deprived neighborhood in the Netherlands is Tilburg-North:
1. The district scores are high on rankings on which one does not want to score high at all.
2. Primary school children in Tilburg-North need extra care the most of all children in Tilburg.
3. There are youth gangs active on the streets that negatively affect the livelihood of the children in Tilburg North.

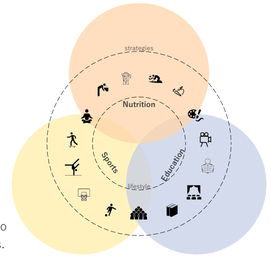


Tilburg-North is an independent neighborhood, hardly connected with the surrounding areas. The city center is located to the south of the Wilhelmina Canal. To the west, the district is closed off with the industrial area by the Midden-Brabantweg. A disconnection also applies to the east side, where the Wilhelmina Canal separates the two areas. There is no connection to the rural area by the N261 road in the north of the district.

The people in this neighborhood must be positively stimulated to adopt a healthy lifestyle.

ACTIVE DESIGN

A healthy-weight environment supports people in avoiding being overweight or obese through the design and provisions of the place. Specifically, a healthy-weight environment promotes physical activity of all sorts and ensures that sustainable transport and active travel are promoted into everyone's daily life. It helps people access and choose healthier goods (in terms of food and drinks) and services (such as healthcare) that support them in choosing a balanced diet, leading an active lifestyle and maintaining a healthy weight.



Playfulness

Young people do not want to sit at home all day. They want to undertake challenging and entertaining activities with their peers.

Safety

A safe place is a basis for a healthy living environment. Young people have social needs and want to spend time together, on the condition that this takes place in a safe place. In addition, parents are more likely to allow young people to go outside if they know it is safe.

Tranparency

A healthy neighborhood must be accessible to everyone. No distinction should be made between gender, family background, age, etc. Being transparent to neighbors and peers will lead to a solid social connection within the neighborhood.

Collaboration

Together people are more potent than alone. Various parties are actively involved in the health of the young people in the neighborhood. Collaboration with other organizations and companies will boost the health outcome.

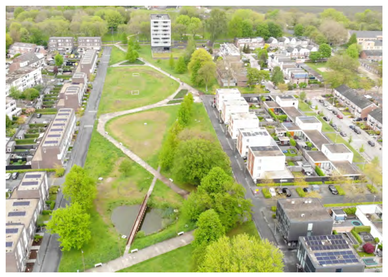
Differentiation

Young people want a unique, exciting playground suitable for themselves and their peers.

Accessibility

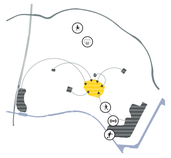
Young people are not willing to travel far for social activities. They require a centrally located place that is accessible to the entire neighborhood and can accommodate enough people.

CONTEXT AND RESEARCH



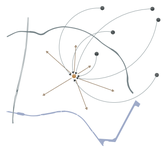
GREEN VEIN IN TILBURG-NORTH

Sports



The goal is to achieve diversity within the accommodation in terms of age, gender and interest. The sports facilities should be located at visible and easily accessible locations and should be part of the neighborhood structure.

Nutrition



Introducing the residents of Tilburg-North to healthy food, this food must be brought to a central location in the neighborhood.
Collaboration with farmers in the rural area offers opportunities for the neighborhood and entrepreneurs.

Education

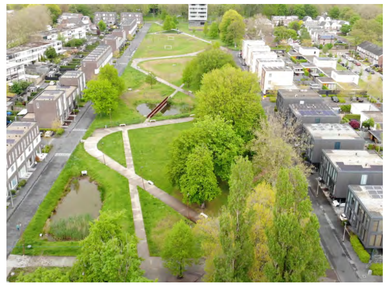
The opportunities are in the center of the district, in between buildings. Bringing education to these places, young people will be open to learning new things.

Accommodations for tutoring or workshops will improve the education of the youth in the neighborhood.

Structure

The area, the green artery Reijnierspad, offers the most opportunities to influence the lifestyle of young people. The residents of the district rarely use this park. This offers many possibilities to create a social environment with architectural interventions.

The green vein in the center of the neighborhood offers the perfect opportunity to activate young people. This green area consists of varying lawns, a few ponds, bicycles- and walking paths, bridges, and some facilities such as a football field, playground equipment, and benches. The spacious layout offers possibilities to apply various sports facilities. These multifunctional activities will motivate all young people to get physically active in this space.

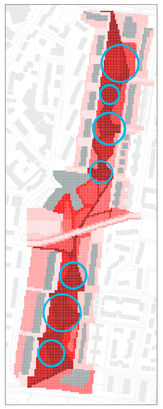


DESIGN CONCEPT

The concept refers to the historical plans in the neighborhood and is enlarged by extending this infrastructure line to exciting places in the area. The rural area in the north and the city center in the south.

By integrating an attractive, slow-traffic route into the neighborhood, the opportunities of the young people are opened up to the surroundings of the Tilburg-North district. The young people will come together on this path to be introduced to diverse and multifunctional activities related to a healthy lifestyle, physical or visual.

ACTIVITY



The activity map indicates where the most opportunities are to increase the physical activity of the users.

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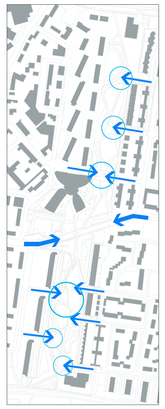
INFRASTRUCTURE



These are the connections of the neighborhood to the park.

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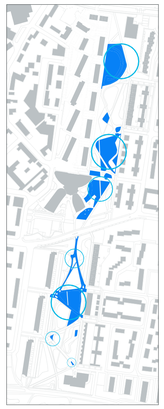
POTENTIAL SPACE



The potential spaces per activity have been mapped based on the results of the research.

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DENSITY

The spaces were to integrate the activities based on the minimal and maximal users to create a lively atmosphere.

URBAN STRUCTURE

The urban development structure of the location has a precise grid. This grid has not changed over the years. What did change is the function of the new park. Around 1960, Tilburg-North consisted of a small village. The park's location was the connecting route for cars traveling between the rural area and Tilburg. This connecting route later disappeared and was replaced by a relatively large green facility that splits the district in two.

Incorporating the urban grid into the project plan creates a relationship between design and surrounding buildings. This relationship will strengthen the transition from the neighborhood to the project plan, and the connection between the split neighborhoods will be restored.

Tilburg-North connected to the city and rural area

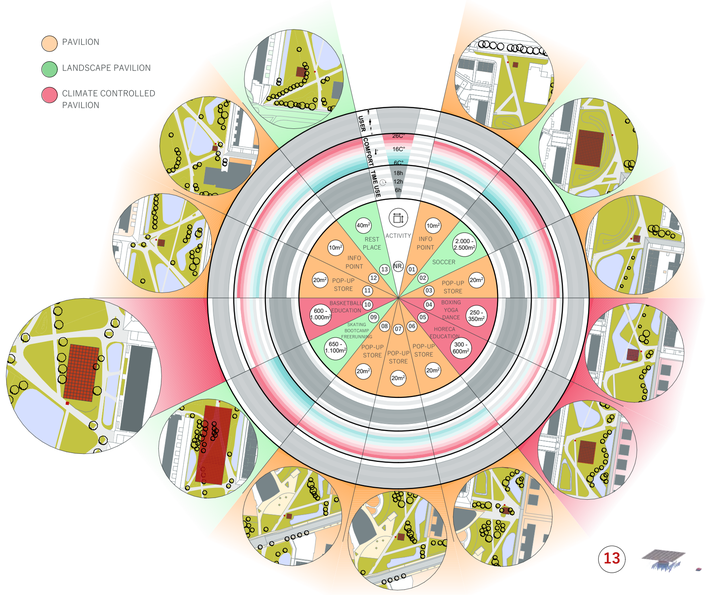
Tilburg-North is divided by the park

The project will restore connections both in the neighborhood and with the city / countryside.

POTENTIAL SPACES

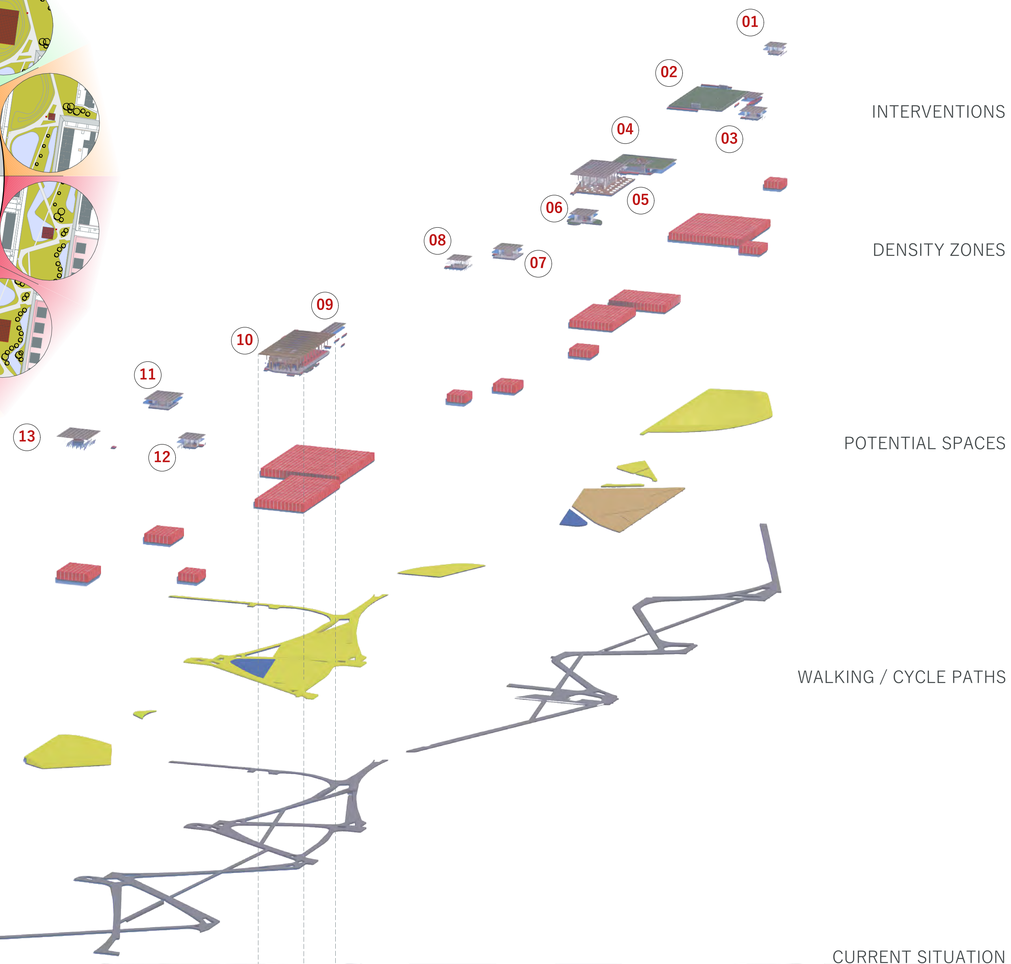
An exercise-friendly environment is an environment in which users are encouraged to move actively, play and exercise. An environment with activities based on the facilities will result in a sustainable project. In order to shape this environment to the wishes of the target group, several activities are essential in the design. These activities meet the needs of the target group.

DESIGN PROGRAM

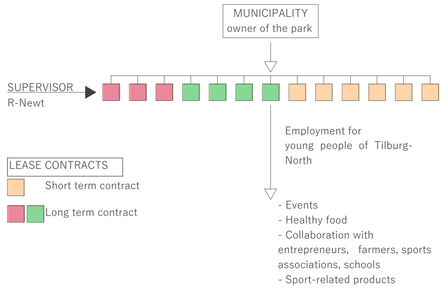


The interventions each have their schedule of requirements. The dimensions of the park require a specific occupancy rate to create an attractive space. This occupancy rate is divided into the interventions responsible for a space requirement (middle circle in the diagram). Every intervention has a specific need for use, climate, and target group (outer circle in the diagram). Based on this need, the interventions can be divided into three groups. A group longing for a physical building (red color). A group longing for attributes in the landscape (green color). Finally, a group that longs for a pavilion for shelter (orange).

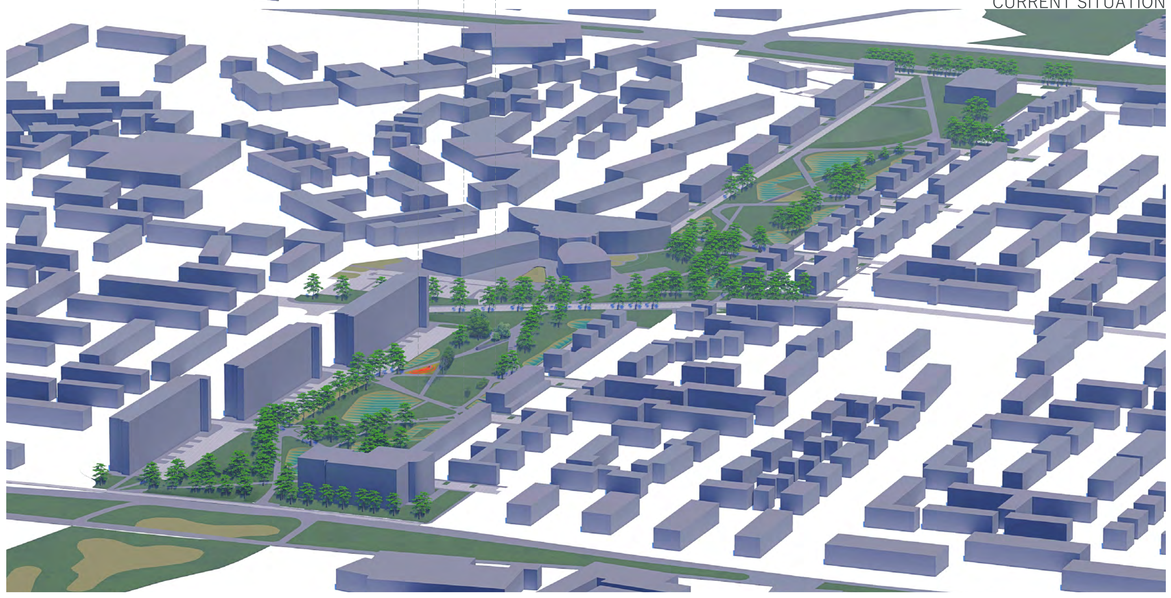
Based on a few design principles that will result in behavioral change in the users, one coherent design will result from the 13 interventions. Implementing the same design strategies will result in various physically connected pavilions utilizing the current park structures and speak the same architectural language.



OWNERSHIP



CURRENT SITUATION



DESIGN

MASTERPLAN

The site is located inside dynamic, various architectural firms can be part of this project. The centre of the Tilburg-North regional park is a large open space surrounded over the entire park with the same orientation. Despite the distances between the interventions, they create a coherent ensemble with the park and the city. The project focuses on a low-rise and close-knit development, with a mix of functions and programs in order to attract as all interventions are accessible to people living in the

01. Info point | 02. Football | 03. Pop-up store | 04. Boxing, Dance, Yoga | 05. Horeca, Education | 06. Pop-up store

07. Pop-up store | 08. Pop-up store | 09. Bootcamp, Freerunning, Skating | 10. Basketball, Education | 11. Pop-up store | 12. Info-point | 13. Relax

SECTION A-A

DESIGN STRATEGY

Cross-intersection cases the overall design strategy.

01. Respect the paths, trees and waters in the existing park.

02. Raised basement: Raised the basement to a level so that no trees have to be removed. A free zone is required around the basement could for the usability of the game. The study space is positioned in line with the basketball court to create a strong connection between the two functions.

03. A strong core attracts the attention of visitors. This attention can be used to activate people to participate in other activities. The core is a place where people can meet each other. **04.** The overhanging roof filled with plants and solar collectors, ensures sustainable regulation of the climate and energy.

05. The crossroads creates a semi-transparent space within the ground structure. This space is accessible from every side and is, therefore, part of both the park and the building.

01. RESPECT THE PARK | 02. RAISED BASEMENT | 03. CELLA | 04. GREEN ROOF | 05. COLLUNADE

Architecture is not only a form language that influences the spaces in a building. This design strategy shows that architecture can respond to people's behavior and neighbourhoods and cities. With the help of the right design strategies, positioning of the spaces and insight into the wishes of the target group, the architecture creates a coherent society where the user is open to a beneficial change of their lifestyle. Behavior change results in a healthy future for Tilburg North regarding physical exercise, nutrition, education, and social interaction.

1. Introduction tile
2. Basketball court
3. Toilets
4. Lockers
5. Storage space, under the stairs
6. Stairs with seating areas
7. Study room, standing tables
8. Study room, seating area
9. Installation space

ATMOSPHERE

DESIGN STRUCTURE

The building is built with modular elements. In this way, the space can be adapted to the wishes of the users in the future.

These modular elements are made in the factory. As a result, the building can be built on the location in a short, which benefits the quality of the materials and the park's surroundings.

CASSETTES

The steel cassettes are filled with sediment or solar collectors. The vegetation absorbs rainwater, and the solar collectors generate enough energy for the use of the building.

PANELS

The elements connected to the bottom of the cassettes hide a variety of decorated wooden panels. The inhabitants will decorate these.

LOAD BEARING BEAMS

The laminated wooden beams provide a arch span for the basketball court. The beams form the structure for cassettes.

MODULAR WOODEN COLUMN AND PANELS

This simple structure of the study space makes it possible to realize the space during the finishing phase.

SIGHTLINES

The transparent structure makes the space accessible from every side.

SPORTS FIELD

The sports field consists of modular tiles that can be used for any activity.

FRAGMENT

The transparent connection between the cinema and the basement enhances the subtle transition from park to building. This added visual connections enhance the user friendliness of this space.

CLIMATE

This design has been constructed **economically** and **ecologically**. The space must be able to function all year round. The sedum roof surface offers this possibility. This sedum roof compensates for the grass surface that is covered by the interventions in the park. In addition, this roof contributes to the biodiversity in the area.

The building is naturally ventilated. The basketball court is partially sheltered on the west side by the surrounding cinema. The sports hall is naturally ventilated through the window openings.

SECTION B-B

The sports hall collects the sewage from the toilets and sinks in the transition zone. This tank can be emptied every month by a truck. The sewage water can be used in the wide existing path in the park that is connected to the public road.

Solar collectors on the roof generate energy for lighting and heating the rooms. The collectors are connected to the roof. The roof has a slope of 10 degrees so that the solar panels can be mounted.

The overhanging roof prevents water from ending up on the basketball court. The green roof gradually drains the water. The water is then transported to the in the ground drains via the gargoyles. Here the water is gradually dispersed in the soil.

The cassettes above the study area function as a rainwater collection tray and lead the water to a tank in the transition zone. This water is used for flushing the toilets.

PROCESS

Due to the steep excavation lines on site, the planning of the process is essential. 1. The first phase consists of the structural roof. Therefore a crane is required. 2. The second phase consists of pouring the concrete floors. 3. The next phase consists of the installation of the cassettes. 4. The last phase consists of the installation of the transition zone between the building and the park.

TRANSITIONS

The spaces can be used in any situation. The function of the space can be adapted to the user at any time of the year/needs/day. In this way, the space meets the user's wishes at all times.

SEASONS

ACTIVITY

OCCUPANCY

PRINCIPLES DETAILS

The principle details of essential cornerstones illustrate the elaboration of the entire building. The insertion of modular elements in the design simplifies the technical elaboration.

The design principles are visible in the details. The large openings in the facade provide a connection between the inside and outside. The visible wood and contractors form a user-friendly space.

1. Fixed insulating glass rooflight
2. Aluminium frame
3. Roof cladding
4. Laminated wooden beam 300*800mm, Accoya, transparent coating
5. Insulation
6. Substrate layer 100mm
7. Sedum roof vegetation
8. Mineral wool insulation 100mm, RC=5,4 m2.K/W
9. Weatherproof Sarnafil 1,5mm, Accoya, transparent coating
10. Wooden beam 300*800mm, Accoya, transparent coating
11. Glazing beam, Accoya
12. Wooden column 1,5,80 m/m²K
13. Water sink
14. Steel U-shape gutter, part of the steel cassette
15. Wooden beam 300*800mm, Accoya, transparent coating
16. Fixed insulating glass, U-value 0,80 W/m²K
17. Aluminium U-profile
18. Concrete wood 80mm, including floorheating system
19. Wooden beam 300*800mm, Accoya, transparent coating, Rc=5,4 m2.K/W
20. Concrete floor 100mm with reinforcement
21. Reinforcing bars 100mm
22. Wooden transparent floor, floated finish
23. Pour concrete

MATERIALS

The materialization of the building is related to the park environment. Connecting the materialization of the building to the park will create a subtle approach for the users, leading the visitors into the building.

The structures of the materials are based on the functionality of the spaces. Therefore, the materials are differentiated between cladded for various purposes, such as large spans and an outdoor environment.

The natural materials make the building part of the park environment.

PARK
ENTRANCE
ATTRIBUTES
INTERIOR
GRASS
WOOD
WOOD
WOOD

RESTORE THE CONNECTION

The project will restore the connections with the surroundings hidden behind the Wilhelmina canal in the south and the highway in the north. This project will become an invitation for people outside the neighborhood to come and visit Tilburg-North. People will be surprised by the neighborhood's encouraging environment and the talented young people.

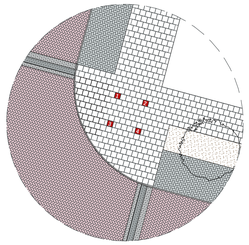
In this project, the characteristics of **physical activity** and **social interaction** come together. The routes from the north and south towards Tilburg-North form a gradual introduction of these features.

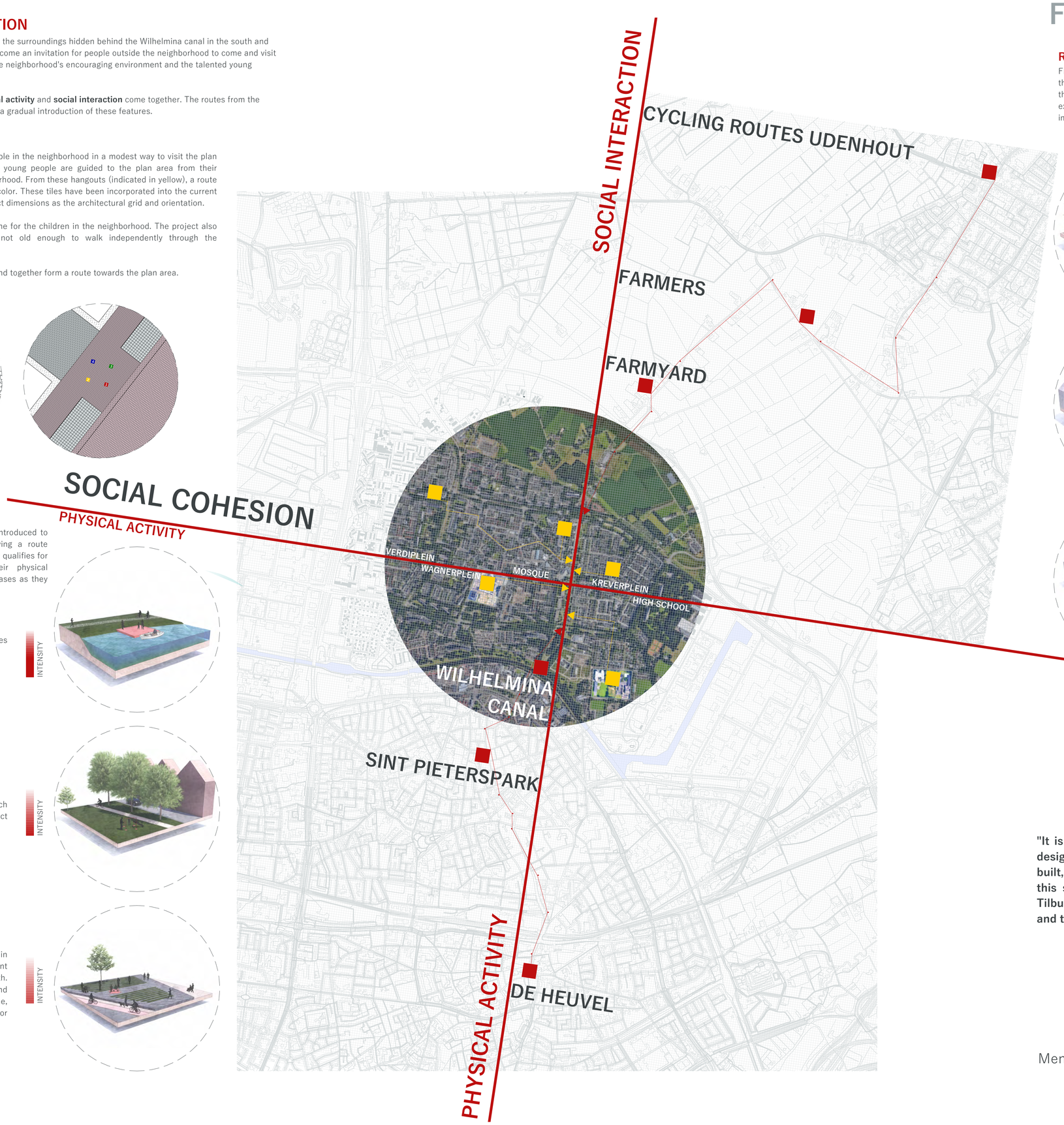
NEIGHBORHOOD

The project aims to motivate the young people in the neighborhood in a modest way to visit the plan area. Without compulsive intervention, the young people are guided to the plan area from their permanent, reliable hangouts in the neighborhood. From these hangouts (indicated in yellow), a route is formed with tiles in the recognizable red color. These tiles have been incorporated into the current street structure. Together they have the exact dimensions as the architectural grid and orientation.

These tiles have a print that presents a game for the children in the neighborhood. The project also positively affects the children who are not old enough to walk independently through the neighborhood towards the plan area.

The four tiles appear in every street scene and together form a route towards the plan area.





CITY CENTER

Visitors from the center of Tilburg will be introduced to the design's physical activities. By following a route formed from the architecture grid, the visitor qualifies for different activities characterized by their physical activity. The intensity of the activities increases as they approach the plan area.

CANOE

Canoeing on the Wilhelmina canal provides physical activity.

BOOTCAMP

A simple installation in Sint-Pieterspark, such as horizontal bars, can be a reason to act individually or in groups physically.

BENCH

A bench in the middle of De Heuvel square in the center of Tilburg acts as an apparent reference to the plan area in Tilburg North. This is due to the striking color and orientation of the object. At the same time, the bench functions as a sitting, lying, or standing object.

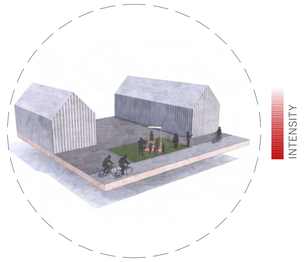
FUTURE DEVELOPMENT

RURAL AREA

From the rural area on the north side, visitors will become acquainted with the social strength of the plan. The architecture grid that characterizes itself in the architectural concept continues in the same grid to the outer area. This route can easily be picked up from Udenhout via the extensive cycle path network already present here. This results in a design that responds to the improvement of the social interactions within the neighborhood.

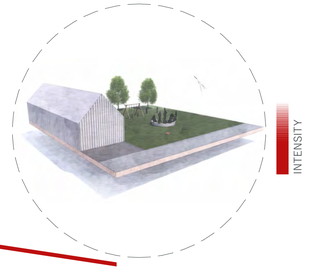
MAP

A road map in the center of Udenhout introduces the plan area from the rural area of Tilburg. The plateau of the road map refers to the plan area by its color and orientation. From this point, a route can be followed within cycling distance of the plan area.



FARMERS FOOD

Via the bicycle route through the rural area towards Tilburg-North, visitors will pass various farms that grow their products. Visitors can buy these products on the road. This way, visitors will contact the local farmers and get to know the fresh, healthy products.



CAMPSIDE

The open landscapes in the rural area offer opportunities for the farmers to use their land for social activities, such as a playground or camping. They can generate extra income, and visitors and farmers come into contact with each other.

"It is possible to create a healthy lifestyle for a society using the right design strategies as an architect. What if every building that would be built, every attribute that will be placed in the city, will be designed with this strategy in mind. This will not only result in a healthy future for Tilburg-North, also for the rest of the city, the rest of The Netherlands and the rest of the world!"

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