The 15-minute city
From paper to practice

REBEL   Fietsersbond   WANDELNET
Altijd in beweging

The 15-minute city:
From paper to practice

WHITE PAPER

First published on
July 11, 2023

Translation published on
March 6, 2024

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15 MINUTE CITY

FOREWORD

The pressure on public space has never been higher. The enormous housing crisis, energy transition and climate adaptation demand that we use our space sparingly. If we want to keep the cities of the future liveable, healthy and accessible, then urbanization and mobility must be tackled integrally, with more attention to active mobility. In this task, Fietsersbond, Wandelnet and Rebel found each other.

Before you lies the outcome: a detailed exploration of the 15-minute city concept, delving into what we encounter when implementing the concept and addressing ways to overcome associated barriers. The emphasis is on enhancing infrastructure for pedestrians and cyclists.

In doing so, we give governments, developers and other interested parties tools for applying the principle of the 15-minute city, thus contributing to the quality of the physical living environment. The primary challenge lies not merely in constructing nearly a million homes but in fostering the development of vibrant, healthy, and green cities and villages that promise a desirable living, working, and recreational experience for the future.

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Time for the 15-minute city

URBAN DEVELOPMENT HAS TO CHANGE

We face a huge housing crisis in The Netherlands. There are plans for nearly a million new homes spread throughout the country. Meanwhile, our mobility system is jammed; at national level (the main road network and the main rail network) and at local level (think of bicycle traffic jams, a shortage of bicycle parking spaces, inadequate walking routes and delivery services parked in the middle of the street). At the same time, road safety and air quality are declining. The pressure on public space was already substantial. Add one million homes and you know: "It's not going to fit." Looking integrally at housing and mobility is popular, but difficult in practice. Funding, stakeholders and decision-making differ and requirements quickly add up.
If we continue in the old way, quality of living, safety, spatial quality and accessibility will continue to deteriorate. Therefore, things must change. The physical environment and mobility comprise a single system and must therefore be developed integrally, with people as the main focus point. So the task is not: build one million houses. The task is: build green and healthy cities of the future, where it is pleasant to live, work and visit. And whilst doing so, pay attention to the one million new homes, as well as to the existing housing availability.

OVER THE PAST 100 YEARS, WE HAVE MADE MORE AND MORE ROOM FOR THE CAR

The urban landscape we are familiar with today has not always existed in its current form. In fact, the contemporary structure of our cities is a relatively recent phenomenon. The inauguration of the Netherlands' first highway, connecting Amsterdam to The Hague, marked a pivotal moment in 1938. However, the true transformation occurred during the 1960s and 1970s. This period witnessed a significant shift, driven by the increasing affordability of cars and the burgeoning enthusiasm for motorized traffic, even among urban planners. Consequently, automobiles began to claim a more dominant role in the urban setting. Streets were paved with asphalt, prioritizing cars, while pedestrians were relegated to the periphery. Concurrently, the distance between residences and essential amenities expanded, facilitated by the newfound convenience of covering larger distances by car.
This era saw the rise of a pervasive reliance on the automobile, as people, creatures of habit, embraced the allure of shiny cars. A detrimental cycle emerged, reinforcing dependence on cars as the prevailing outcome.

NOW IT'S TIME TO GO BACK TO THE 15-MINUTE CITY

So, what is a good way to design your city? We don't have to look far to answer this question, but we do have to go back in time a bit. Before the upcoming of the car, daily life happened much closer to home. In each district, the most important facilities were accessible on foot or by bicycle. More and more policymakers and residents want to return to that. The 15-minute city concept has been in vogue for a few years now, led by Carlos Moreno (Sorbonne University) - who points to The Netherlands as an inspiration for the concept - and Anne Hidalgo (Mayor of Paris).
The 15-minute city is an urban concept in which all facilities that are important in daily life can be reached on foot or by bicycle within 15 minutes of home: education, care, work, shops, public transport and relaxation. An 'old' concept, with a new name.

THIS WHITE PAPER CONTAINS DESIGN PRINCIPLES FOR THE 15-MINUTE CITY, AND TIPS FOR PUTTING THOSE PRINCIPLES INTO PRACTICE

More and more cities are trying to implement the 15-minute city concept, but in doing so, space and mobility are still too often seen separately. Integrated designs are difficult to be put into practice. In this White Paper we provide an overview of design principles for space and mobility that fit the 15-minute city concept (chapter [2]). We also show which barriers governments and developers encounter in putting these design principles into practice, and how they deal with them in practice (chapter [3]). To exemplify these principles in action, the White Paper delves into two illustrative cases outlined in (chapter 4). The first case explores the development of a new city district, Almere Pampus, showcasing how the design principles were implemented in a greenfield setting. The second case examines area development within an existing city, focusing on Zwolle Meeuwenlaan, illustrating the adaptive application of the principles in an urban context.
It is important to recognize that the creation of a 15-minute city is not a goal in itself, but a means to achieving green and healthy cities, where it is nice to live, work and stay. Certain parts of these ideas might also be applied to villages or smaller developments. The purpose of this White Paper is to provide governments and private developers with tools to integrate these principles into area developments.

Design principles

SEVEN PRINCIPLES FOR SPACE AND MOBILITY
The foundation of the 15-minute city revolves around prioritizing people and fostering sustainable travel. Sustainable journeys, in this context, encompass several key facets:

- Short-distance journeys
- Healthy journeys
- Inclusive journeys (accessible to everyone)
- Clean journeys
- Safe journeys
- Efficient journeys (approached from three perspectives):
  · Traffic-efficient journeys
  · Space-efficient journeys
  · Time-efficient journeysn

Applying these principles is aimed at bridging the worlds of mobility and space. This requires a compact, mixed and liveable city. And the application of the Dutch STOMP design principle, where the interests of pedestrians, cyclists, public transport, and shared mobility take precedence before private car considerations. This chapter introduces design principles aligned with these objectives, namely:

These design principles can be used as guidelines when designing an area - for example, when drawing up an area plan or Mobility Programme of Requirements - but also to test an existing design or area. Not all principles will apply to every area, nor do they have to. The principles are intended as guidelines and as an inspiration, not as a blueprint. The principles have been developed specifically for urban areas.
Although there are numerous other important topics in designing cities (social, climate, circularity, etc.), in this White Paper we have chosen to limit ourselves to principles of urban planning and mobility.

·	**COMPACT AND MIXED CITY**
·	**LIVEABLE CITY**
·	**WALKING**
·	**CYCLING**
·	**PUBLIC TRANSPORT**
·	**MOBILITY AS A SERVICE / SHARED MOBILITY**
·	**PRIVATE CAR**

COMPACT AND MIXED CITY

☐ Key utilities (education, health care, work, shopping, public transport and recreation) are present in the area from day one, are within walking distance of the homes and are spread throughout the area where possible.

☐ The housing supply is diverse (social rent, free sector and private houses in various price ranges) creating a mixed group of residents in the area.

☐ Employment is diverse (different types of jobs) and flexible (can grow with developments and/or population). Employment matches the characteristics of the local population, thus limiting inbound and outbound commutes.

☐ Public space is designed so that its use can adapt with changing needs, both in the short term (dual use, e.g. a road when it rains, a pedestrian area when the sun shines) and decades from now (parking lots can be permanently adapted to green spaces).

☐ Around public transport hubs, such as stations, densification is maximized. In particular, the first 300 metres around the stops - which do not require any pre- or post- transportation other than walking - will be maximally used for various functions.

☐ There is room for new and/or alternative forms of housing.

THE LIVEABLE CITY

- ☐ In our public spaces, the priority is given to people. The focus is on human beings rather than vehicles.
- ☐ The public space is attractive, safe, accessible and invites everyone to be outside, move and meet.
- ☐ The area offers 24/7 opportunities to stay, be entertained and move around.
- ☐ The area is vibrant and has a clear identity, for example, through rich facades and active plinths. To make the number of plinth metres as large as possible and to make fast walking routes possible, there is a fine-tuned subdivision. Additionally, there are places designed for tranquility and areas intentionally created for a lively atmosphere or 'background noise.'
- ☐ With development, green and blue in the area are enhanced. Both for attractiveness and (climate-adaptive) functionality.
- ☐ There is a pleasant micro-climate (for example: little or no wind nuisance and heat stress) in places intended for residence and active mobility. Bicycle and pedestrian infrastructure is combined where it makes sense.
- ☐ The places where people live and work are car-free or else as car-free as possible. If this is not yet immediately possible, the area will be designed in such a way that it can eventually become car-free.
- ☐ Within the city, motorized traffic is the guest. For roads with a thoroughfare function and for roads used by public transport, a maximum speed limit of 30km/h applies within the city limits.

1 Time for the 15-minute city

2 Design principles

3 Dilemmas

4 Case studies

WALKING

☐ For travel up to 500 metres, walking is the way to get around. Additionally, walking up to a distance of 2.5km is optimally facilitated and encouraged.

☐ Walking routes are accessible, attractive, logical, easy to find, safe and comfortable. By this we mean, for example (not exclusively) the following:
  - accessible: obstacle-free, spacious walking areas, presence of ramps
  - attractive: presence of greenery, lively, space for meeting and playing
  - logical: clear landmarks, recognizable walking routes
  - easy to find: clear signage, presence of guide lines
  - safe: crosswalks are for pedestrians, enough eyes on the street, lighting, attention to pedestrian safety where cyclists (at different speeds) also use the same space
  - comfortable: space to rest and relax

☐ Walking routes connect the main destinations in the immediate environment. Together they form a complete and coherent network, both within the area and between the area and surrounding areas.

☐ The network contains at least a main network, a basic network and a green, relaxing network that may or may not overlap and connect several parts of the city in a logical and safe way. Through this network people can get from A to B in an attractive way and have varying experiences. However, the network is also designed for people to just come for a stroll. Note: it is important that these walking networks are also recorded in network maps, as part of e.g. a municipal mobility plan.

☐ The network has a fine grid, so pedestrians don't have to make detours if they don't want to. Walking routes are shorter than car routes. Pedestrians and cyclists are hindered as little as possible by barriers such as (rail) roads and water.

☐ The recreational network within the built-up area connects to the recreational route structure outside the built-up area (city-country connection).

☐ Walking routes encourage multi ways of travel by connecting public transportation and shared mobility, and starting points and destinations.

CYCLING

☐ For trips within the city of more than 500 metres, the bicycle is used for the majority of journeys.

☐ There is a comprehensive and interconnected network of bicycle routes, both within the area and connecting the area to surrounding areas. The bicycle routes within the area seamlessly connect to one or more thoroughfare cycling routes.

☐ There are clear green connections and bike lanes that together form a logical route for fast cyclists toward major destinations and shopping areas.

☐ The bicycle network has a fine grid. Bicycle routes are shorter than car routes.

☐ Bicycle routes are safe, attractive, logical, easy to find and comfortable. By this we mean, for example (not exclusively) the following:
- safe: cyclists do not have to share a road with speeding cars, safe crossings, enough eyes on the street, good lighting, bike lanes sufficiently wide
- attractive: varied (not just straight lines), greenery, pleasant pavement and public art
- logical and easy to find: clear landmarks, recognizable bicycle routes, clear signage
- fine grid: those who want to can get from A to B by bicycle without (many) detours
- comfortable: good pavement, smart design of intersections
- accessible: adequate space for adapted bicycles (e.g. cargo bike) and pleasant crossings (consider adequate lining up space at traffic lights for cyclists)

☐ Bicycle parking and parking facilities are:
- well secured and feel socially safe
- accessible and easy to reach: bicycles can be parked/stored close to home with a maximum of one connecting door and no difference in height. In case of facilities, a distance to the bicycle parking/storage area of maximum 150 metres applies
- usable for both regular and mountain bikes because of sufficiently large and accessible racks and slots
- equipped with sufficient charging facilities for electric bicycles
- indoors for residents and neatly incorporated into the public space for visitors (preferably in greenery)

PUBLIC TRANSPORT

☐ Public transport
- is clean and sustainable
- is inclusive and accessible
- is traffic and socially safe
- is within walking distance (max. 10 minutes) of all residential and commercial districts in the area.
- minimizes the number of transfers required
- facilitates multi-modality; there is a smooth connection to walking and cycling routes and facilities such as bicycle parking
- is present before the first resident moves into the area
- is designed to facilitate automated driving systems

☐ Public transport consists of lines and stops at various levels:
- broad-tuned, fast and frequent high quality public transportation (HOV)
- fine-tuned regular public transportation (OV)

☐ Important stations
- are realized in places with (future) high population densities
- are within walking distance (max. 10 minutes) of 70% of living and working areas
- are located up to 5 minutes by bike from all living and working areas
- are all-sided (with no obvious front or back). The entire station and the area around it has a high residential quality
- offer activity, for example with all kinds of facilities in or around the station (supermarket, gym, etc.); they are an attractive place to stay and wait
- have plenty of space for bicycle parking

☐ Regular public transit stops
- are attractively connected to housing, work or other amenities
- provide shelter and travel information

MOBILITY AS A SERVICE AND SHARED MOBILITY

☐ There is a diverse range of electric shared mobility available that
- is digitally well accessible and offers analogue booking alternatives for people who are less digitally literate
- is spatially clustered in mobility hubs
- hierarchical structure. Shared bikes and scooters are more attractive than public transport, public transport is more attractive than shared cars, shared cars are more attractive than the private car

☐ Mobility hubs
- offer shared mobility
- come in various kinds, which together form a hierarchical network. The facilities in a hub vary according to the hub type. From small hubs, with shared bikes and scooters on the corner of the street, to large hubs at the edge of the neighbourhood where one can park, but where there are also meeting points
- are designed to be moveable and up- and down-scalable
- Are logically connected to public transport stops
- can serve as a battery for the neighbourhood
- generate energy

PRIVATE CAR AND LOGISTICS

- ☐ Car Parking
  - is bundled at the edge of the district, combined with mobility hubs whenever possible.
  - assumes dual use, for example, by residents and visitors. No private/fixed parking spaces will be issued.
  - is set up for 100% electric (bi-directional) charging. The power grid has sufficient capacity for large-scale electric vehicle charging
  - is developed including a rezoning vision outlining what to do with the plot or building if the need for parking decreases. For instance, it's recommended to avoid building underground (as basements are not easily converted into homes) and instead construct with sufficiently tall floors that can be easily transformed into livable spaces
  - is based on a parking standard that depends not only on characteristics of the property, but also on the quality of the pedestrian and bicycle network, public transport and partial mobility. This means, for example, that the parking standard near a public transport hub will be lower.
  - is paid and regulated through permits to avoid a waterbed effect (parking congestion in surrounding areas)
- ☐ Car movements in the neighbourhood are reduced as much as possible, both for residents and delivery services. For example, through smart location of facilities and workplaces.
- ☐ Logistics flows are bundled in a logistics hub on the outskirts of the city. From here, facilities are served by zero-emission transportation.

Dilemmas

In reality, municipalities and developers are increasingly adept at incorporating the principles outlined in Chapter 2 into their designs. However, the primary hurdle they face lies in the subsequent stage: translating these principles into tangible actions. This chapter outlines several common challenges encountered during the implementation of design principles and proposes potential solutions. It's essential to acknowledge that we don't claim exclusive wisdom, and not every dilemma can be addressed universally.
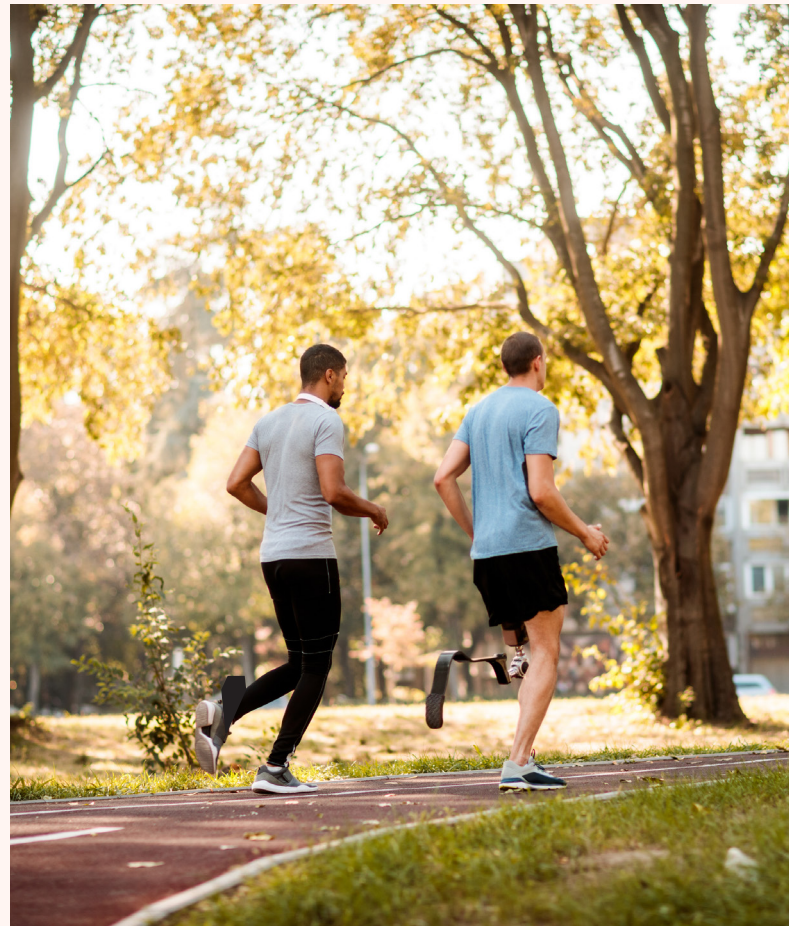
"Are you running into other issues? Or do you have ideas on how to deal with these challenges? let us know!

1 2 3 4 5 6 7 8 9

I'D LIKE TO PUT PEOPLE AT THE CENTRE OF THE PROJECT, BUT HOW TO DO SO WHEN THE TARGET POPULATION FOR THE AREA DEVELOPMENT IS STILL UNKNOWN? AND HOW DO I DESIGN THE INFRASTRUCTURE FOR WALKING, CYCLING AND PUBLIC TRANSPORT? BECAUSE WHAT IS ATTRACTIVE TO SOME IS INACCESSIBLE TO OTHERS, AND VICE VERSA.

In order to put people at the centre of area development, it is important to know the motives, wishes and requirements of the future users of the public space. If it is not yet known who the new residents/users of the area will be, or when it is evident that it will be a very diverse group, two approaches can be taken:

1. Design safe infrastructure for the most vulnerable group of road users (children, the elderly, people who use assisting devices) and start from the accessibility standards that apply to those groups. After all, if it is safe for those groups to move around and live here, so will it be for the less vul-

nerable group. A traffic-safe environment lowers the barrier to walking and cycling for all users,

2. Design and develop public space in such a way that the future residents themselves can still partly fill in the space differently and/or that you organize the process in such a way that the first 'end result' of the area is not immediately the final one. This makes it possible that after several years, together with the residents, a (limited number of) adjustments can be made to make the infrastructure and public space more attractive. This could apply in particular to (parts of) public space that have meeting and living as the (most) important function, and that are provided with benches, public greenery, recreation facilities, etc.

1 **2** 3 4 5 6 7 8 9

HOW DO I DEAL WITH UNCERTAINTIES ABOUT THE FUTURE, ESPECIALLY IN A LONG-TERM DEVELOPMENT? WHICH DECISIONS CAN OR SHOULD I MAKE EARLY ON, AND WHICH WOULD BE BETTER POSTPONED FOR A WHILE?

Many area developments have a long starting up time. Anything can happen during that time. Think of the IJmeer connection and the other ways of accessing Almere Pampus for pedestrians, cyclists, public transport and cars: which connection will eventually be chosen will have a major influence on the rest of the development. In order to make good, future-proof choices despite these uncertainties, it makes sense to work out (at least) two scenarios for 30 - or preferably - 100 years from now. One limited scenario, in which the systems as we know them today more or less still exist, and one extensive scenario, in which all kinds of disruptive developments have taken place. From these scenarios 'backcasting' can then take place. Backcasting is a way of thinking back from a scenario to the present in order to identify the steps that will be needed to achieve the desired final picture. Conversely, it is also useful to 'forecast': to reason out, independently of the possible scenarios, what developments are expected to occur and what steps should be taken when. This process of backing up and forecasting provides insight into which themes and at what times the different futures will diverge. This makes it possible to identify which measures are 'no regret' (a good choice regardless of developments)

and which choices might be better postponed for a while, until more is clear about further developments.

Possible ways to be adaptive include
- Assume a modular concept in which housing, greenery, mobility, etc. are scaleable and relocatable. Also consider, for example, parking spaces that can be reallocated, or a system of superblocks, where cars are first allowed to drive everywhere, and later only on the "outer" ring.
- Assume a grid structure
- Solve parking at the edge of the area.

Delaying decisions can be achieved through strategies like phased construction of public transport and maintaining flexibility in key decisions, such as determining the number and locations of stations and their opening times. However, it's crucial to be mindful of the potential impact on residents who might grow accustomed to certain features only to have them removed later. In such cases, offering immediate alternatives is essential. For instance, replacing on-street parking with high-quality public transport right at the doorstep.
Of course, not every decision can be deferred. Additionally, embracing adaptive planning means conducting work while ensuring that public spaces remain inviting and pleasant throughout the process.

1 2 **3** 4 5 6 7 8 9

**HOW DO I ENSURE THAT ADEQUATE AME-
NITIES ARE ALREADY IN PLACE BY THE TIME
THE FIRST RESIDENTS MOVE IN? FOR EXAM-
PLE, HIGH-QUALITY PUBLIC TRANSPORTATION,
STORES, SCHOOLS, ETC.**

The programme, the mobility system, residents and
other users cannot be separated. So it is essential to
think about all three in unison. Moving to a new place
is a life change for residents. When it comes to a newly
constructed neighbourhood, everyone is creating new
habits at the same time. For the envisioned 15-minute
concept to catch on, it is important that the most
important utilities, such as public transport, supermar-
kets, schools, etc., are already present when the resi-
dents move in, so that the desired behaviour is imme-
diately possible.

It is difficult for deliverers and entrepreneurs in expan-
sion locations and new districts to make this invest-
ment at the beginning. See, for example, Pampus.
Pampus will be an urban district where the core
qualities of Almere are reflected: sustainable, social,
accessible, economically powerful and, of course, with
real nature (including the Almeerse Wadden). But
which companies or what kind of entrepreneurs will
settle on Pampus? And who are their employees? And
when are economic functions realized versus housing?
And what is the mobility behaviour and what are
mobility needs of the people coming to live and work
in Pampus?

A possible solution for this is twofold. Firstly, it is
beneficial to create an overview of the desires and
needs of (future) residents using data. Subsequently,
it is crucial to engage in timely discussions with par-
ties playing a significant role in fulfilling these needs.
A good example of this is the Midden-Holland region.
In the new public transport concession, the region has
included a stipulation that the concession holder must
serve these areas: "...in new residential areas (where
at least 800 people will reside) from the planned deli-
very of the 50th dwelling onward...". This concept can
be incorporated for other types of amenities in vario-
us policy documents such as lease contracts, urban
design program requirements, or zoning plans. This
ensures that essential services are present in a timely
manner.

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I AM GIVEN ALL KINDS OF REQUIREMENTS FOR THE AREA. CONCERNING MOBILITY, AND ALSO, FOR EXAMPLE, ENERGY, BIODIVERSITY, CIRCULARITY AND WATER. HOW DO I PREVENT AN ACCUMULATION OF REQUIREMENTS FOR AN AREA? AND IF I CAN'T PREVENT IT: HOW DO I DEAL WITH IT? HOW DO I BALANCE VARIOUS DOMAINS? HOW DO I ENSURE INTEGRALITY, BUT ALSO SUFFICIENT FOCUS? AND HOW DO I DEAL WITH SECTORAL THINKING?

Space is limited, making it challenging to accommodate all requirements. Moreover, certain demands may be at odds with each other. For instance, while the municipality's green spaces team may argue that a fallen tree on a walking path enriches the area (for play, biodiversity, etc.), the maintenance team might perceive it as an unappealing streetscape.

There is, of course, no one-size-fits-all solution for this dilemma. Setting priorities primarily occurs through political decision-making in spatial visions. Subsequently, it is essential to intelligently link requirements as much as possible. For instance, connecting biodiversity, water, and green elements through the creation of wadi ponds. Developing a vision for the area that extends beyond the redevelopment and delivery period is crucial. This approach allows for the inclusion of maintenance considerations in the decision-making process.

Read more about stacking requirements? See the guide to sustainable area development that Rebel drafted for the municipality of Almere.

1 2 3 4 **5** 6 7 8 9

THE CAR PARKING STANDARD APPLICABLE IN THE AREA IS HIGHER THAN I WOULD LIKE, AND/OR THE BIKE PARKING STANDARD IS LOWER THAN I WOULD LIKE. HOW DO I DEAL WITH THAT? HOW CAN I STILL APPLY OR ENFORCE LOWER CAR PARKING STANDARDS OR HIGHER BICYCLE PARKING STANDARDS?

Car and bicycle parking standards are often laid down in a parking vision and an accompanying note on parking standards. Sometimes it is possible to deviate from these standards. For example: in Rotterdam a developer can get a 'discount' on the parking norm if there is public transport or shared mobility nearby. If this is not possible in your municipality, you can have a lower car parking norm and/or higher bicycle parking norm established separately via the Council, for example through the Mobility Programme of Requirements. A strong justification is required for this. Arguments for a lower parking standard may, for example, be that car ownership among the target group is low or that many alternatives to the private car are available (walking, cycling, public transport, shared mobility). Arguments for a higher bicycle parking standard may be that the target group owns more bicycles than assumed in the standard, and/or that more bicycle parking space stimulates cycling, which contributes to policy issues such as livability and health.

Want to read more about Mobility Programmes of Requirements? See the MRA's area development & smart mobility guide, and the MRA website for several examples of Mobility Programs of Requirements.

❝ It is important to develop a vision for the area that looks beyond the duration of redevelopment and delivery.

1 2 3 4 5 **6** 7 8 9

HOW DO I DEAL WITH INVESTMENTS IN THE AREA OUTSIDE THE AREA DEVELOPMENT THAT ARE PRECONDITIONS OR AT LEAST OF ADDED VALUE TO THE DEVELOPMENT?

Investments outside the planned area, critical for successful development, are called extraneous costs. To cover these expenses, municipalities often link them to a development with a positive business case. Losses from one project are offset by profits from another. Municipalities can establish a fund, mandatory for developers or other beneficiaries to contribute to. Businesses in the area may also contribute, whether voluntarily or as required by the municipality through the exploitation plan.

Some municipalities, like Eindhoven, already use such funds. The municipality can also use benefit tax to fill the offsetting fund by taxing property owners for benefits from municipal facilities. All these processes rely on an exploitation plan, typically prepared by the spatial planning team.

Crucially, these need to be anchored in overarching policies like structure vision, zoning plan, environmental plan, etc.

WHO PAYS FOR THE COST OF GUARANTEED PRESENCE OF SHARED MOBILITY? WHAT IS THE ROLE OF THE MUNICIPALITY IN ORGANIZING AND PAYING FOR SHARED MOBILITY?

Shared mobility can contribute greatly to an area where it is pleasant to live, work and visit. However, it is important that the right means of transport are offered and that users do not miss out. Otherwise it is impractical to fully implement the desired leading model for pedestrians and cyclists. After all, occasionally a sofa or washing machine has to be picked up.

The guaranteed presence of sufficient shared mobility in an area does not come about automatically. It requires active management by the municipality and/or developers, and often payment to the shared mobility provider. In this regard, it is desirable that not every plot or area development designs its own shared mobility system. Joining a broader system of shared mobility is desirable both for the users (more choice, a larger network) and for the paying party (lower costs due to economies of scale).

If the municipality owns land, the municipality can impose requirements on a joint approach to shared mobility and parking by developers from that ownership role. From a steering mechanism perspective, it is desirable if this joint shared mobility and parking solution is owned by the municipality. The developer then compensates the municipality for this.

If the municipality doesn't own land, it can theoretically enforce that all the mobility of a development be solved in a collective way, outside the area development, through the zoning or environmental plan. In M4H in Rotterdam and the Merwedekanaalzone in Utrecht, for example, large communal parking garages (mobility hubs) are planned. Looking at the quality of public space, this is an attractive option. Because all mobility - of residents and visitors - can be accommodated at the edge of the area in this option, increasing the quality in the area and creating a better balance between costs and revenues. However, this option is also complex.

Issues such as cost accounting, governance, mutual dependencies and phasing play a major role. An alternative is for developers to solve only visitor parking collectively.

Want to read more about shared mobility and hubs?
See the MRA's mobility hub roadmap.

1 Time for the 15-minute city
2 Design principles
3 Dilemmas
4 Case studies

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THE CITY IS ALWAYS CHANGING. WHAT DOES THAT MEAN FOR THE IDENTITY OF MY AREA?

An area (neighbourhood) in itself has no identity: the people who live, work and stay there determine it. People identify more easily with their neighbourhood (district level is more difficult) if public space offers opportunities to stay, meet and play. Planning these spaces centrally in neighbourhoods and making them pleasant, safe and accessible creates places that residents identify with and are proud of. This also makes them more involved in 'protecting' that place. If the fabric of a neighbourhood changes for whatever reason, that place remains present. Monitoring usage can provide insight into whether a (re)design is necessary to maintain the function (for example, more benches and less playground equipment because the population is aging).

1 2 3 4 5 6 7 8 **9**

HOW DO I ENTICE PEOPLE TO PARK THEIR BIKES INSIDE?

Too often we still see people parking their bikes outside, while indoor bicycle parking spaces are empty. In order to optimize the use of indoor bicycle parking space, it is important that

- there is a logical route, where the user naturally cycles to the entrance of the indoor parking lot and can then proceed into the building or courtyard
- access to indoor parking is also easy to pass with adapted bicycles
- joint spaces are not too large in scale, so that a sense of safety and responsibility is created
- overhead racks in parking lots are used only as an "extra" spot, for example, for parking second or third bicycles. For everyday bicycles, top racks are heavy or inconvenient for many people

In addition to these "pull" measures, stricter enforcement of wrong-way parking on the street is also possible, of course.

Are you running into other issues? Or do you have ideas on how to deal with these challenges? Let us know!

Case studies

CASE STUDIES

We applied the design principles from Chapter 4 to two case studies: new urban district Almere Pampus and the redevelopment area Zwolle Meeuwenlaan. Almere Pampus is now almost completely undeveloped. This means that except for connecting to existing structures, there are no physical obstacles to realizing a 15-minute city. The downside is that with a new to be constructed area, you don't know in advance exactly who will be living and working there. As a redevelopment area, Meeuwenlaan has existing structures. The existing context influences how design principles (can) be applied. These two cases were chosen becau-se a significant number of development locations in The Netherlands fall (in part) into one of these two categories.

In this chapter we show a number of principles for each case that require attention or have been worked out in an interesting way (not extensively). In addition, a number of design principles do not apply to the Meeuwenlaan case study; we also explain these.

Case study: new urban district Pampus

Almere Pampus is a new to be constructed urban district, located in the far west of Flevopolder on the IJmeer. The plans for Almere Pampus are still in the design phase. Currently, Pampus is still a green, undeveloped polder. The first phase of Pampus should be realized by 2030. Ultimately, the plans state that Pampus will have 25,000 to 35,000 homes as well as 16,000 jobs. To apply our design principles, we are looking particularly at the first phase of Pampus.

A good mobility concept is essential for Pampus. Because even without Pampus, there are already significant mobility problems in the Amsterdam and Almere metropolitan region. If transport demand continues to be facilitated without additional mobility measures, the negative consequences will be enormous.

Compact and mixed city
Amenities within walking distance
Ideally, the main amenities (education, health care, work, shopping, public transport and recreation) should be present in the area from day one. This can certainly be difficult in the beginning: because Pampus is being developed in phases, too few people will live and work there in the beginning to make it attractive for facilities to settle in the area. See also the dilemma "How do I make sure that already at the time the first residents move into their homes, that there are enough facilities present?"

In addition, the extent to which amenities are within walking distance of the front door depends in part on the density at which they are built. The lower the density, the further people will live from amenities on an average. Building density, in turn, is strongly related to the target population.
Finally, it should be noted that from its original design, Almere is focused on car, public transport and cycling. Facilities are generally not within walking distance.

Miscellaneous employment
Ideally, employment would be diverse (different types of jobs), matching the characteristics of the local population. But in Pampus, it is not yet known who will live there, and thus what kind of employment will go with it. See also the dilemma

"I want to put people first, but how do I do that if the target group for the area development is still unknown?" Moreover, employment is only marginally manageable: the municipality can steer to the desired kind of employment, but where and when companies want to locate remains an uncertainty at the beginning.

The liveable city
24/7 opportunities to stay, be entertained and move around
Ideally, an area is vibrant, offering 24/7 opportunities to stay, be entertained and move around. This is certainly a concern in the beginning. After all, Pampus will not be built overnight. In the beginning not enough people will live and work there to satisfy these wishes. It is not a bad thing that there are not immediate 24/7 opportunities. What is important, however, is that social safety is guaranteed.

Many plinth metres
A large number of plinth metres allows for a lot of vibrancy at street level. To realize many plinth meters, a fine-tuned subdivision is desirable. How fine-tuned the divisions can be is related to the density in which they are built: the higher the density, the more fine-tuned the divisions can be. The choice for a certain density has not yet been made for Pampus, and is strongly related to the target group for the area

Car-free or otherwise close-to-car-free
Residential and work areas are ideally car-free or, at the very least, designed to minimize car presence. In Almere, the desire to park directly in front of one's door is quite prevalent. Introducing remote parking might pose a challenge for many individuals. Nevertheless, the anticipation is that people would be more amenable to such changes if accompanied by tangible benefits, such as an enhanced and enjoyable living environment.

Walking
Walking routes are contiguous
Walking routes are ideally contiguous, together forming a network within the area development, but also outside it. A point of attention for Pampus is that there is not yet a clear walking network in Almere. This means that there are currently no logical places where the pedestrian network of Pampus can connect to pedestrian networks in surrounding neighbourhoods. The principle of connected walking routes therefore requires not only good walking connections within Pampus, but also the construction of a good walking network outside Pampus. Pampus can serve as the flywheel for this. See also the dilemma "How do I deal with investments in the area outside the area development that are preconditions or at least of added value to the development?"

Cycling
Bicycle network
As with walking routes, bicycle routes should be connected to a contiguous network, both inside and outside the area. The challenge here is twofold. First, when developing the first sub-area of Pampus, it is not yet known exactly how the other sub-areas will be designed. To ensure that investments are made in a good and robust bicycle network despite this uncertainty, a choice can be made to work with modular, circular bicycle paths. If necessary, these can be relocated in the future. See also the dilemma "How do I deal with uncertainties about the future, especially in a long-term development?"
Second, social safety in the polder is a concern. Lighting an entire route every evening and night is generally not desirable because of the disturbance to animals. With smart lighting, social safety can be ensured as much as possible, even with a smaller number of cyclists.

Public Transport
Public Transport present from day one
It is desirable to have a high-quality presence from day one, so that the first residents and visitors can use it and immediately embrace public transport as a habit. However: this involves considerable start-up costs. Because initially there will still be too few users of public transport for a somewhat balanced business case. See also the dilemma "How do I make sure that already at the moment the first residents move into their homes, that there are sufficient facilities available?"

Train/Underground stations within 5 minutes' cycling
Ideally, these stations should be located no more than 5 minutes by bike from all the places where people live and work. The stations (train and underground, see map) in Pampus so far are not located within a 5-minute bike ride of all the places where people live and work. To realize this principle, either more train or underground stations will have to be drawn in, or a bus network with these qualities will have to be implemented.

Shared Mobility
Shared mobility offerings
Ideally, there should be a diverse supply of shared mobility in an area. If shared mobility providers see a sufficient market in Pampus, they will - to the extent policy frameworks allow - offer shared mobility in Pampus. If the municipality wants to impose requirements on the presence of shared mobility and hubs in Pampus - for example, on the number or kind of vehicles, or on the locations where it is offered - there is a chance that this will have to be paid for. The question is who pays for this: the municipality, the developer, or the user? See also the dilemma "Who pays the cost of guaranteed presence of shared mobility?"

Mobility hubs
I
Ideally, shared mobility services are clustered in mobility hubs. When these hubs are built or located within a building, they often face a financial shortfall. Typically, the real estate costs cannot be covered by the revenue generated from shared transportation or parking. If the municipality wishes to enforce the creation of indoor or built hubs, there's a possibility that someone will need to foot the bill. The question arises: who will bear this cost - the municipality, the developer, or the user? Furthermore, it may be undesirable for each developer to create their own hub, especially if a single larger hub is preferable over multiple smaller ones. In such cases, developers must collaborate to establish a shared hub, typically requiring municipal oversight. See also the dilemma of "Who pays the cost of guaranteed presence of shared mobility?"

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Private car and logistics
Dual use car parking
To limit the number of required parking spaces (and thus free up space and save costs), ideally, there is double-use of parking spaces. This means that residents and visitors use the same parking spaces, and no dedicated or fixed parking spaces are assigned. In general, developers sometimes view the inability to offer dedicated or fixed parking spaces as a potential deal-breaker. They fear that a costly home without a designated parking space may be challenging to sell. Additionally, for Almere specifically, it is relatively common for people to have their own parking spot. Not having a dedicated parking spot might be a deterrent to living in Pampus. Similar to remote parking, the expectation

is that if there is something in return – such as a more pleasant living environment – people will be willing to purchase a home without a fixed or designated parking space. "The car parking standard applicable in the area is higher than I would like, and/or the bike parking standard is lower than I would like."

Pampus
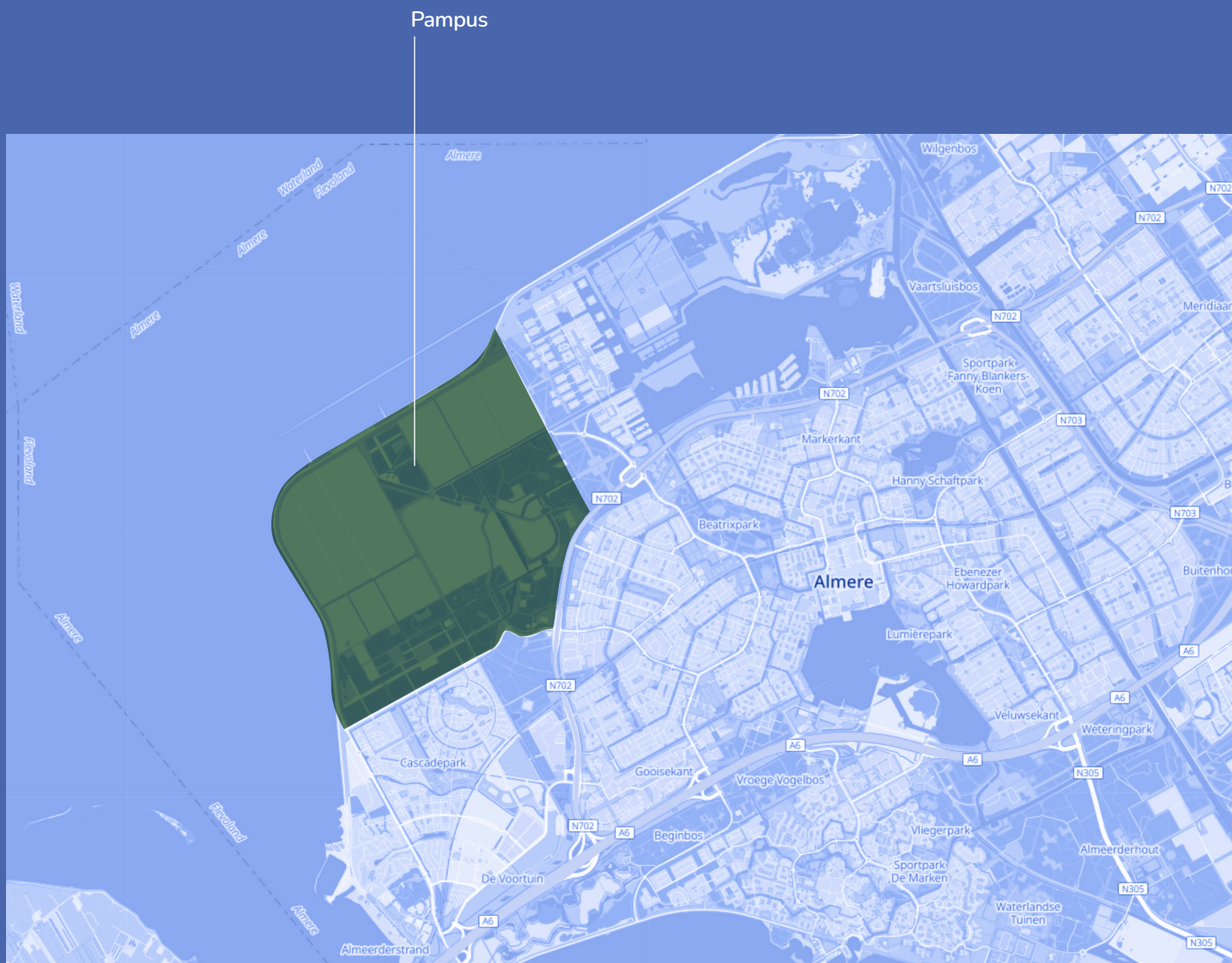
Case study transformation site Meeuwenlaan

The area between Meeuwenlaan and the A28 motorway will be transformed from an office location into a new urban neighbourhood. The realization phase will run from 2024 to 2028, and a total of about 700 homes and an additional small programme of non-residential amenities will be realized. The development zone lies in the transition zone from the old city center to the Kamperpoort urban district. Therefore the development area is strongly connected to the centre of Zwolle. The design of the development focuses on green urban living, with space for social contacts. To apply the design principles we use the future situation in 2030 as outlined in the area vision development zone Meeuwenlaan of March 2022.

Compact and mixed city
Miscellaneous employment
Since this is a transformation site in the existing city close to the centre, this design principle is less valid. However, an additional non-residential programme that complements the existing neighbourhood is currently being studied.

The liveable city
24/7 opportunities to stay, be entertained and move around
Ideally, an area is vibrant and provides 24/7 opportunities for staying, relaxing, and moving. However, within the planning area of Meeuwenlaan, there are virtually no amenities that offer 24/7 possibilities for staying, relaxing, and moving. For these, Meeuwenlaan relies on the city center, which is within walking distance.

Walking
As few barriers as possible on walking routes
The number of barriers (highways, rail, water, etc.) on walking routes is preferably as limited as possible. Meeuwenlaan (the road, not the area development) is a barrier to pedestrians coming to the area from downtown. This is not insurmountable, but can be avoided by "splitting up" Meeuwenlaan or creating attractive crosswalks

Connected loop network
Walking routes are ideally contiguous, forming a network together. Within the area development, but also beyond. Within the Meeuwenlaan planning area, there is a lot of focus on walking routes. But the walking routes outside the planned area are less attractive. Especially better walking routes are desirable to connect to downtown and the station. See also the dilemma "How to deal with investments in the area outside the area development, which are preconditions or at least of added value for the development?"

Cycling
Safe bicycle network
Cyclists share their infrastructure in the Meeuwenlaan transformation site with other means of transport. Sometimes with pedestrians, and sometimes with cars (on a 30 km/h road). There is nothing wrong with that in itself, provided the number of cyclists, pedestrians and cars allows it.

Shared Mobility
Energy-generating mobility hubs
The Meeuwenlaan area vision mentions mobility hubs with shared mobility. Although the installation of solar panels seems likely, it has not yet been formally indicated that they will be installed. Mobility hubs that generate (and store) energy can play an important role in energy transition. It is therefore desirable to explore opportunities in this area. See the dilemma "I get all kinds of requirements for the area."
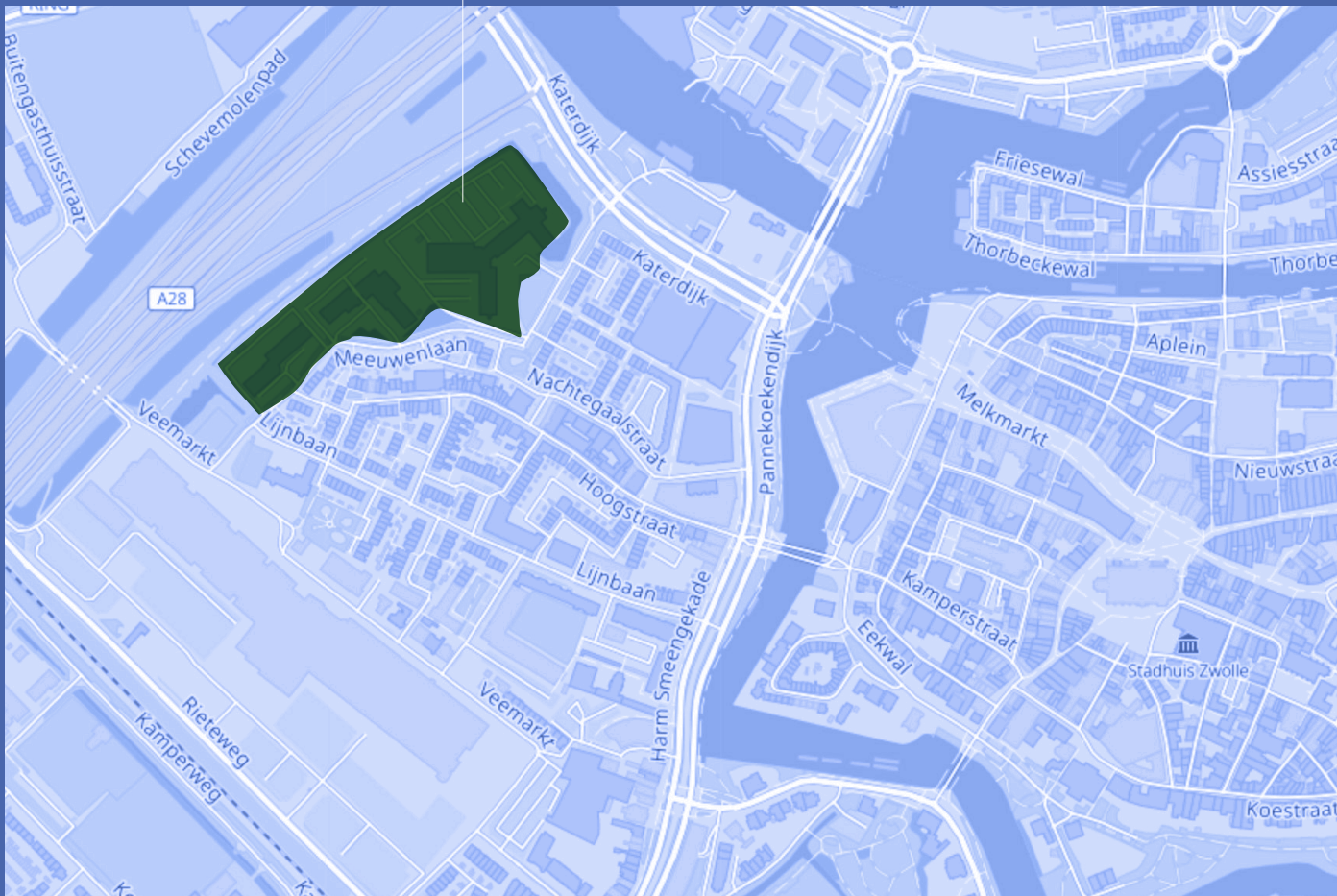
Design principle car parking
Dual use car parking
To reduce the number of parking spaces needed (thus freeing up space and saving costs), ideally there should be double use of parking spaces. This means that residents and visitors use the same parking spaces. And that no private/fixed parking spaces are issued. In the Meeuwenlaan area some of the expensive homes may get a long-term parking right, but no ownership. This is a nice way to meet existing need on the one hand, and on the other hand to be able to make other choices in the future.

Paid parking
To prevent parking congestion, it sometimes makes sense to introduce paid parking/permit parking. This is also relevant to the Meeuwenlaan site. Currently there is paid parking at the amenities (including the cinema) in the immediate vicinity of the Meeuwenlaan. However, not at all times of the day. If there is free parking in the Meeuwenlaan area, visitors to those facilities may park their cars in the Meeuwenlaan area. With inconvenience to residents and visitors to Meeuwenlaan as a result.

Meeuwenlaan

1 Time for the 15-minute city

2 Design principles

3 Dilemmas

4 Case studies

The 15-minute city:
From paper to practice

ЯƎBEL

Fietsersbond

WANDELNET
Altijd in beweging

Ontwerpprincipes 15-minutenstad

Uitgangspunt voor de 15-minutenstad is dat de mens centraal staat en dat verplaatsingen duurzaam zijn. Dat vereist een compacte, gemengde en leefbare stad. En de toepassing van het STOMP-principe, waarbij achtereenvolgens geredeneerd wordt vanuit de voetganger, de fietser, het OV, deelmobiliteit en pas daarna vanuit de auto. Hieronder vatten we de belangrijkste ontwerpprincipes vanuit ruimte en mobiliteit samen. Meer weten? Zie het rapport "de 15-minuten stad: hoe doe je dat?"

COMPACTE EN GEMENGDE STAD

- ☐ Voorzieningen (onderwijs, zorg, werk, winkels, OV en ontspanning) op loopafstand
- ☐ Divers woningaanbod
- ☐ Diverse werkgelegenheid
- ☐ Flexibele inrichting openbare ruimte
- ☐ Verdichten rond OV-knooppunten
- ☐ Ruimte voor alternatieve woonvormen

DE LEEFBARE STAD

- ☐ Mens centraal in de openbare ruimte
- ☐ Aantrekkelijk, veilige, toegankelijke openbare ruimte die uitnodigt tot buiten zijn, bewegen en ontmoeting
- ☐ 24/7 mogelijkheden om te verblijven
- ☐ Levendig en duidelijke identiteit
- ☐ Versterking groen en blauw
- ☐ Prettig microklimaat
- ☐ Woongebied autovrij of autoluw
- ☐ 30 km/h voor wegen met doorstroomfunctie binnen bebouwde kom

STAPPEN

- ☐ Tot 500 meter lopen dé manier van verplaatsen
- ☐ Looproutes zijn Passend, Aaneengesloten, Veilig, Levendig, Obstakelvrij en er zijn Voorzieningen op loopafstand (PAVLOV-vuistregel)
- ☐ Gedifferentieerd loopnetwerk
- ☐ Ketenreizen stimuleren

TRAPPEN

- ☐ Boven 500 meter binnen de stad fietsen dé manier van verplaatsen
- ☐ Netwerk van fietsroutes binnen gebied en naar omliggend gebied
- ☐ Groene verbindingen
- ☐ Fijnmazig fietsnetwerk
- ☐ Veilige, aantrekkelijke, logische, vindbare en comfortabele fietsroutes
- ☐ Veilige, toegankelijke, bruikbare fietsparkeerplaatsen en stallingsvoorzieningen

OPENBAAR VERVOER

- ☐ Schoon, toegankelijk, veilig OV op max. 10 minuten van alle woon- en werkplekken in het gebied
- ☐ Aanwezigheid hoogwaardig OV (HOV) en regulier OV
- ☐ HOV-stations op maximaal 5 minuten fietsen van alle woon- en werkplekken
- ☐ Reguliere OV-haltes aantrekkelijk verbonden met woningen, werk of andere voorzieningen

MOBILITY AS A SERVICE

- ☐ Gebundeld autoparkeren aan de rand van de wijk, zoveel mogelijk dubbelgebruik
- ☐ Zo min mogelijk autobewegingen in de wijk
- ☐ Logistieke hub aan de rand van de stad

PRIVÉAUTO EN LOGISTIEK

- ☐ Divers aanbod van elektrische deelmobiliteit
- ☐ Hierarchisch netwerk van mobiliteitshubs