Hybrid Working Quality Living

Transformation of densification for live-work mixed-use neighborhood in post-pandemic office districts: Beukenhorst, Hoofddorp

**All images that are not specifically labeled are produced by the author .*

P5 Presentation

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2nd Mentor:

Ir. Rients Dijkstra

2023.1.20

Have you ever...?

https://healthiersleepmag.com/excessive-daytime-sleepiness/

https://www.zooplus.co.uk/magazine/cat/cat-adoption/working-from-home-with-your-cat

https://peakzone.io/will-remote-work-after-covid-19-become-a-permanent-solution/

Society

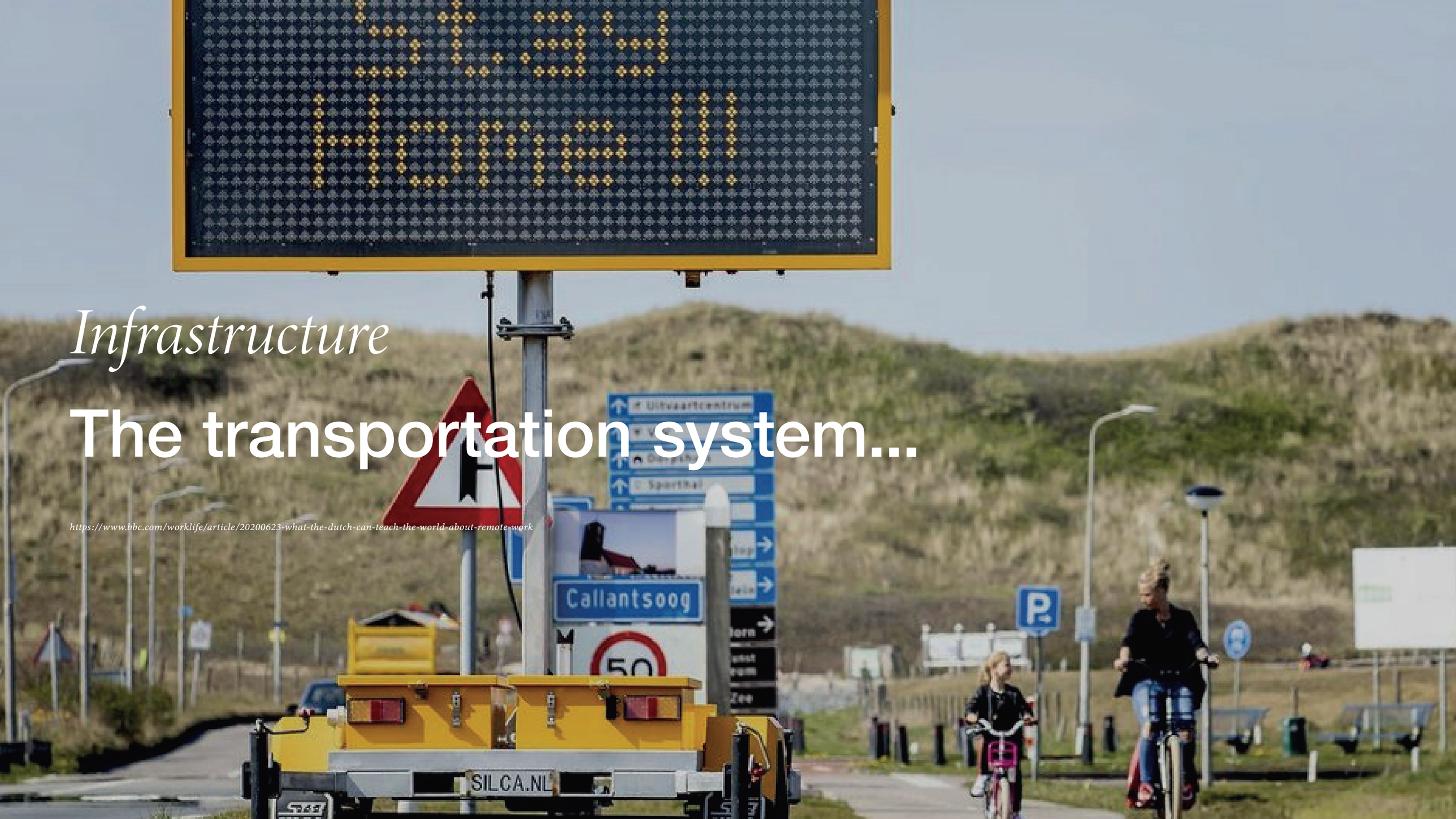
Let’s think about the labor market...

https://www.brookings.edu/blog/the-avenue/2021/09/08/augusts-jobs-report-shows-higher-unemployment-for-black-workers-just-as-jobless-benefits-and-eviction-protections-end/

Built environment

The housing market and the offices...

https://www.foxbusiness.com/real-estate/us-real-estate-monumental-opportunity-solve-housing-crisis-2023-expert

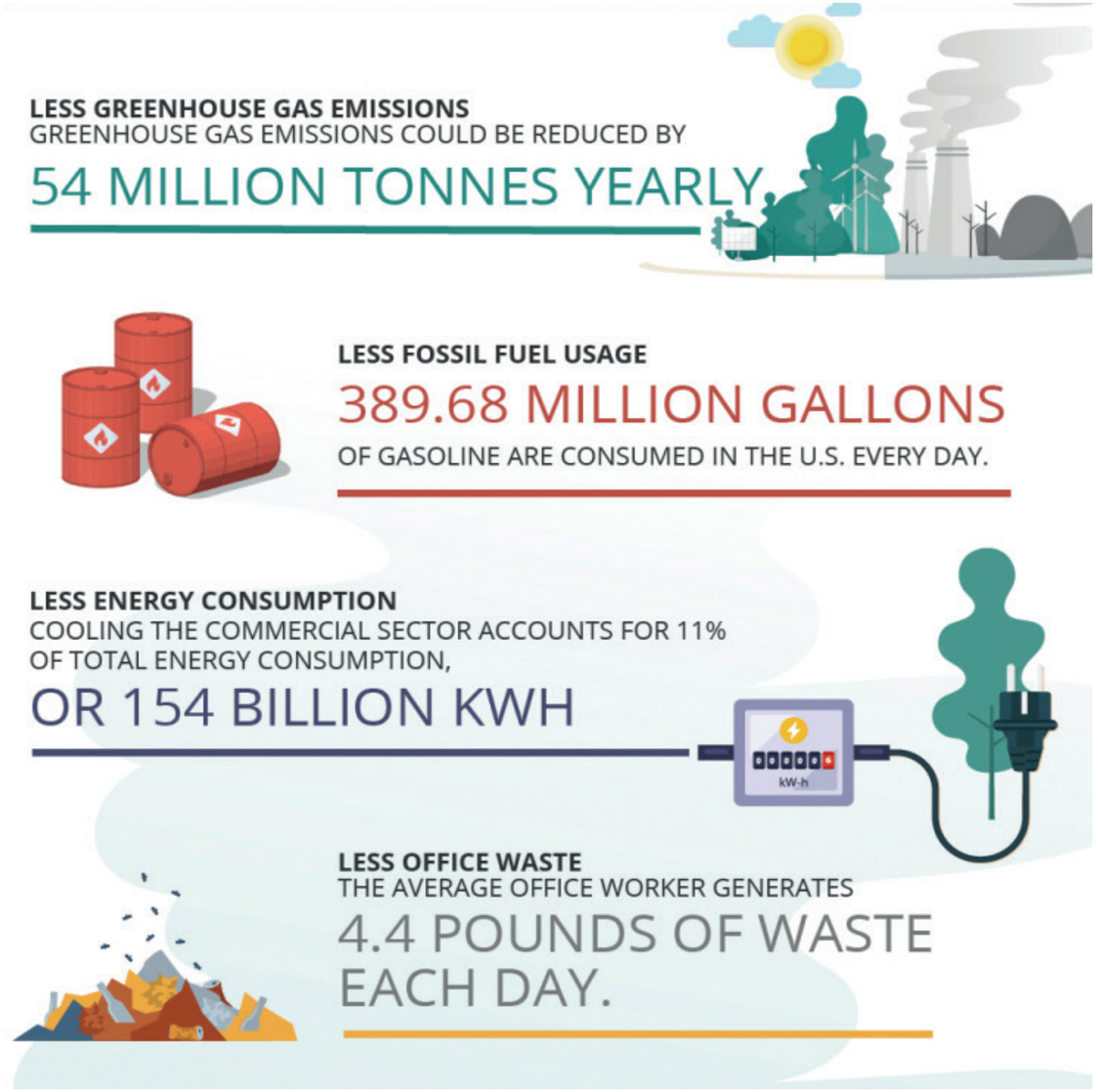


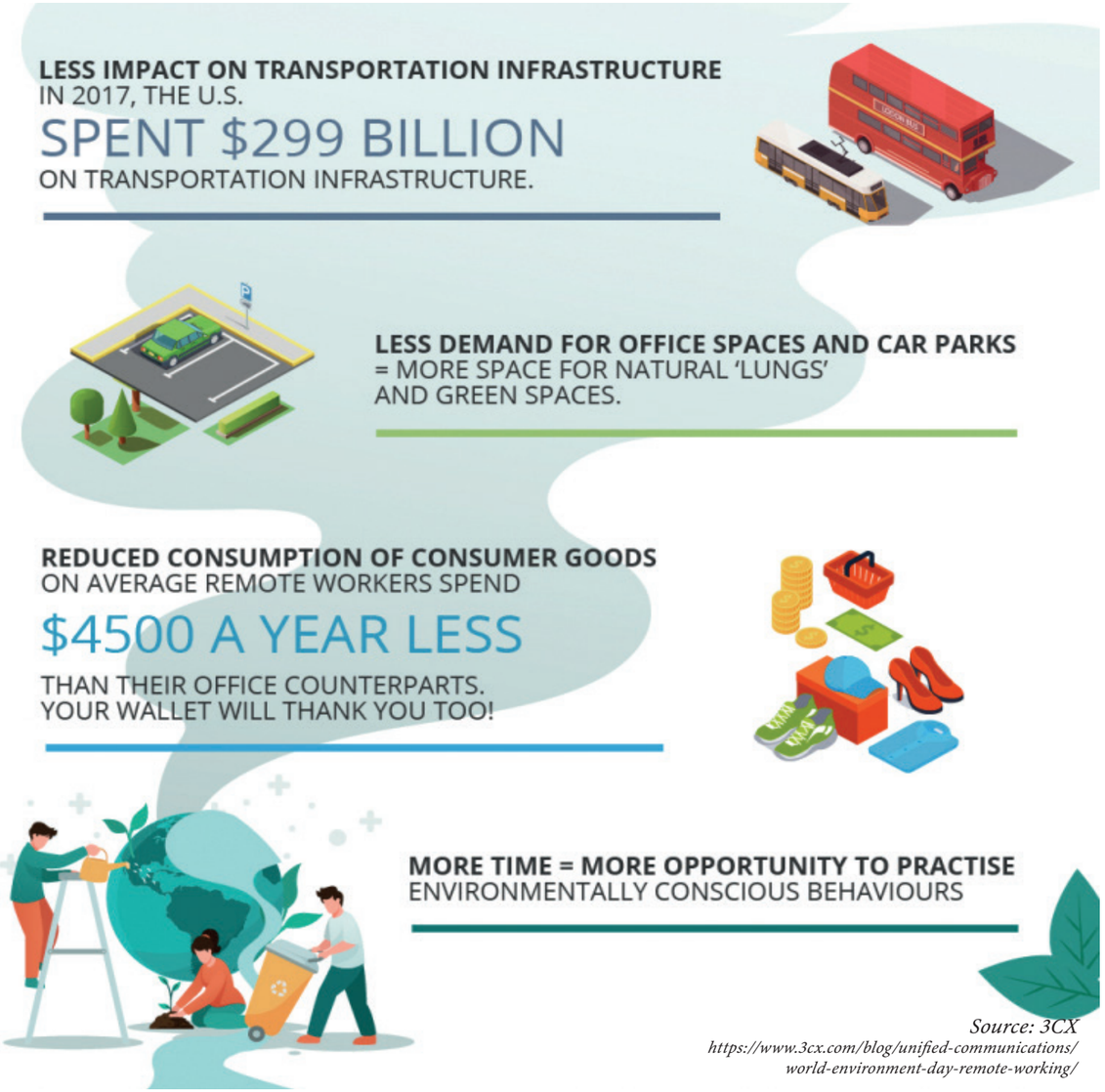
Infrastructure

The transportation system...

https://www.bbc.com/worklife/article/20200623-what-the-dutch-can-teach-the-world-about-remote-work

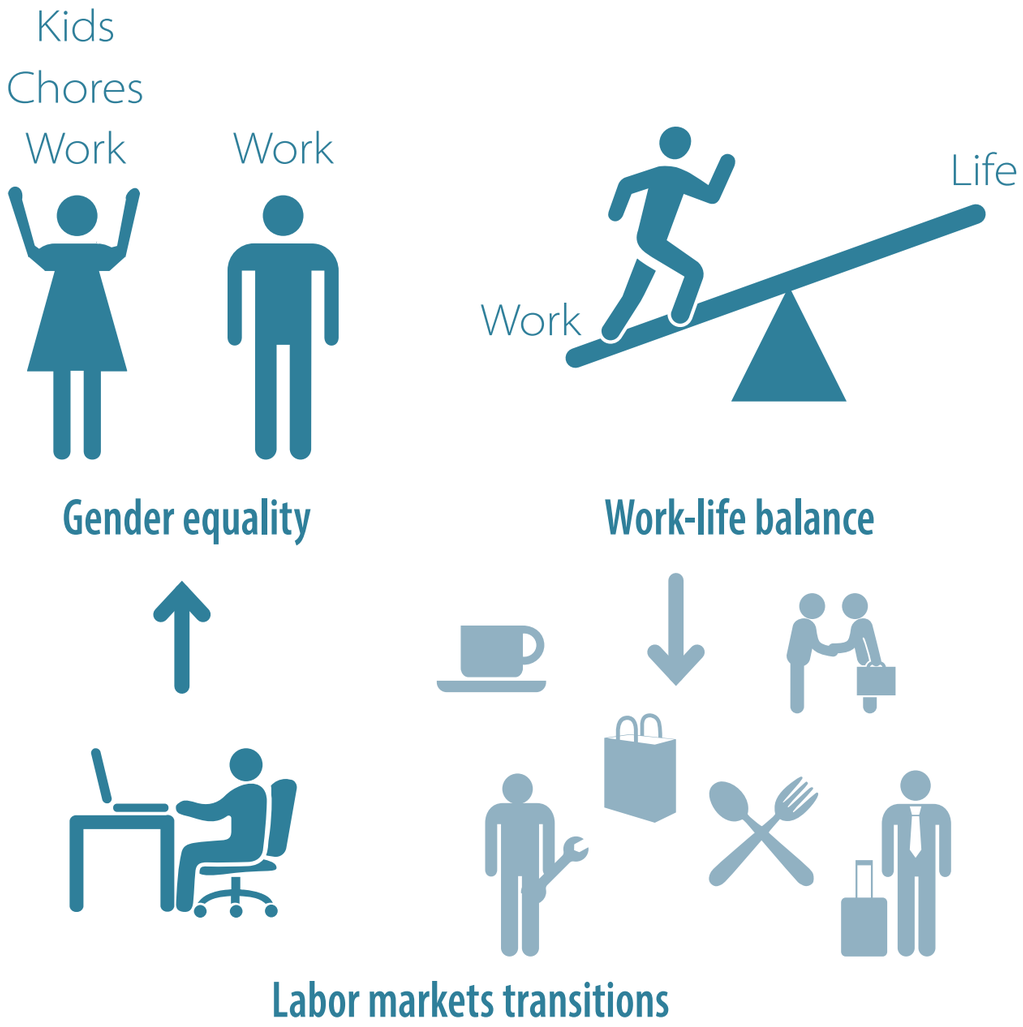
And even the decarbonization goals





Source: 3CX
https://www.3cx.com/blog/unified-communications/world-environment-day-remote-working/

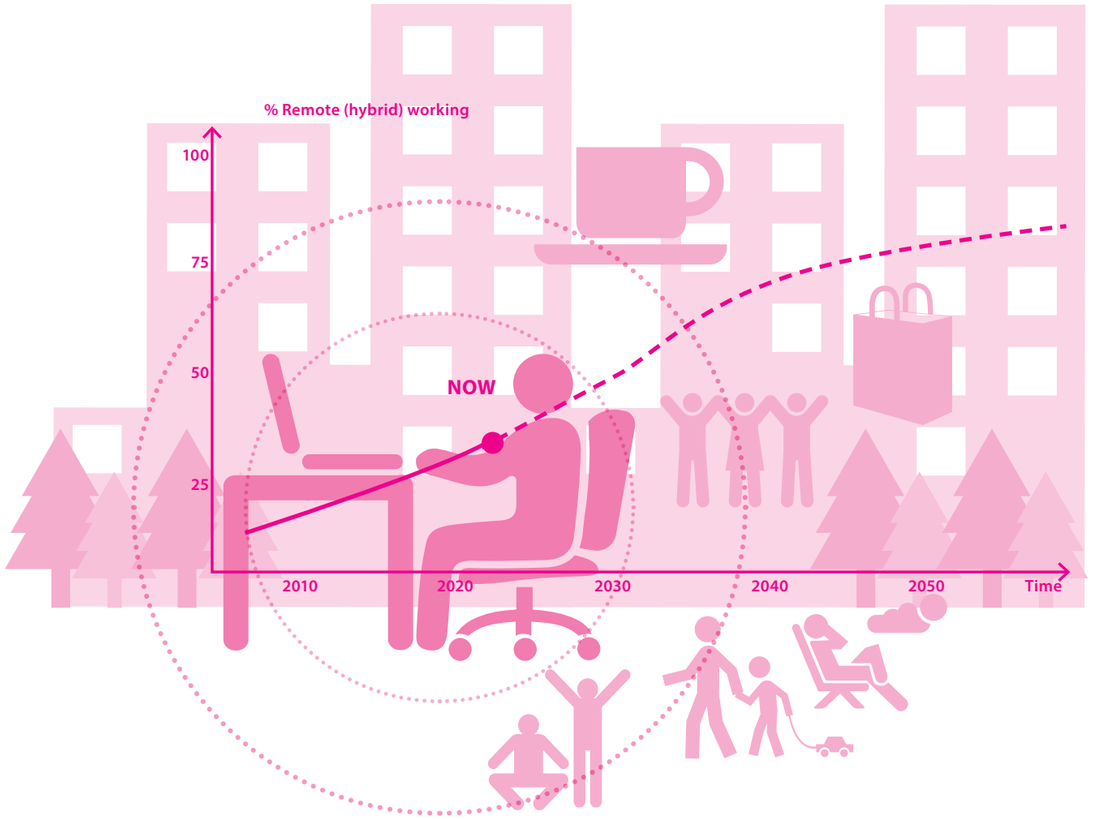
On the other hand, hybrid working has its limitation



> *The impact of the pandemic on work, the workforce, and the workplace will persist ever after. The disruptions of work will be larger for the lower-paid, less-educated, and vulnerable workers.*

-- The future of work after COVID-19. ***McKinsey.***
(Lund et al., 2021)

That is why this project sets out to make best use of the persisting hybrid working trend...



Home

Cafe, library & other (semi) public space

Outdoor

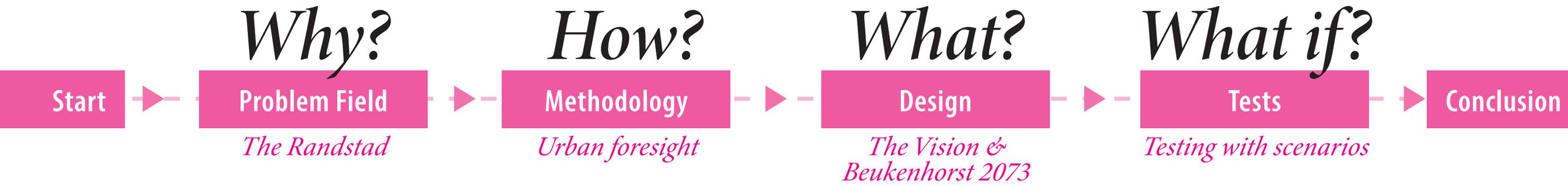
Shared office

On-demand office (as service)

Types of remote working. ***By author.***

...to imagine a more vibrant, equal, and connected society in 50 years

Roadmap


Why?
How?
What?
What if?
Start
Problem Field
Methodology
Design
Tests
Conclusion
The Randstad
Urban foresight
The Vision &
Beukenhorst 2073
Testing with scenarios

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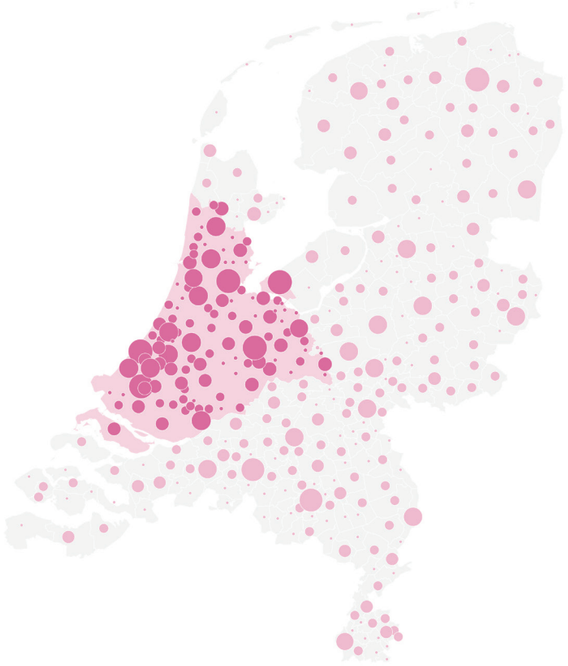
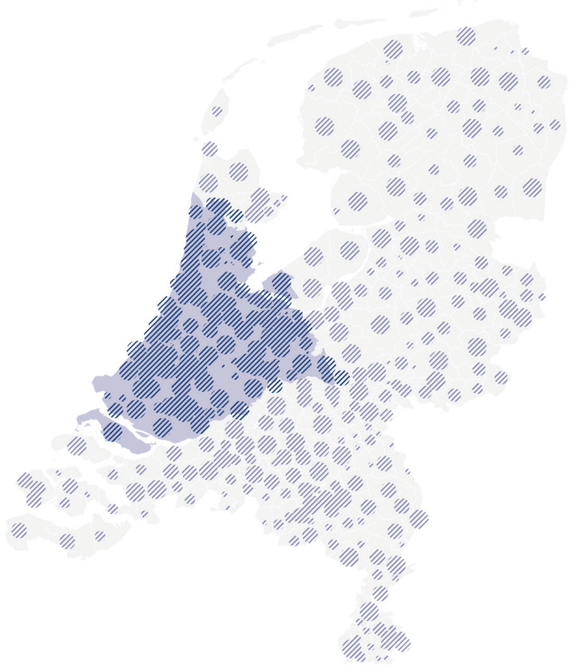
We need to make clear what challenges we are faced with



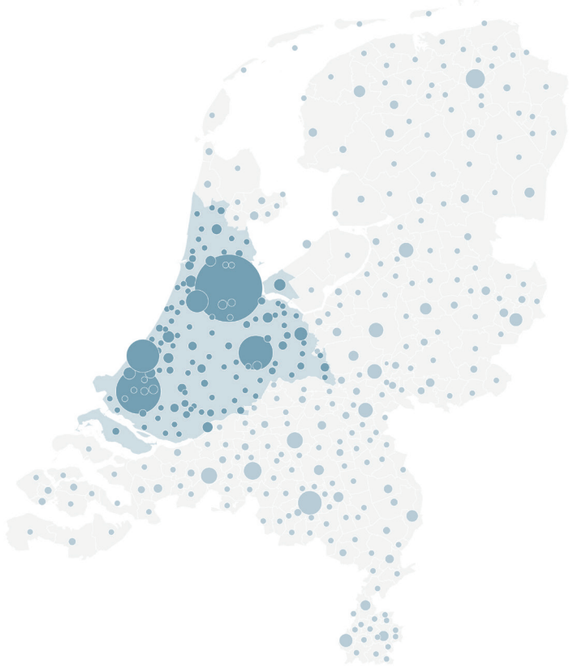
Population by municipality, 2020

- <25,000
- 25,000-50,000
- 50,000-100,000
- 100,000-200,000
- >200,000



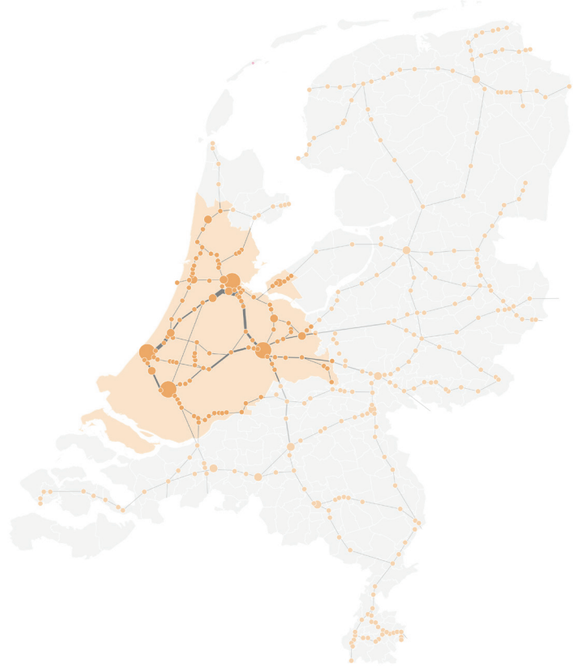
Number of company branches by municipality, 2020

- <1,500
- 1,500-2,000
- 2,000-2,500
- 2,500-4,000
- >4,000



Employee jobs by municipality, 2018 (thousand)

- >633,8
- 300
- 0,4

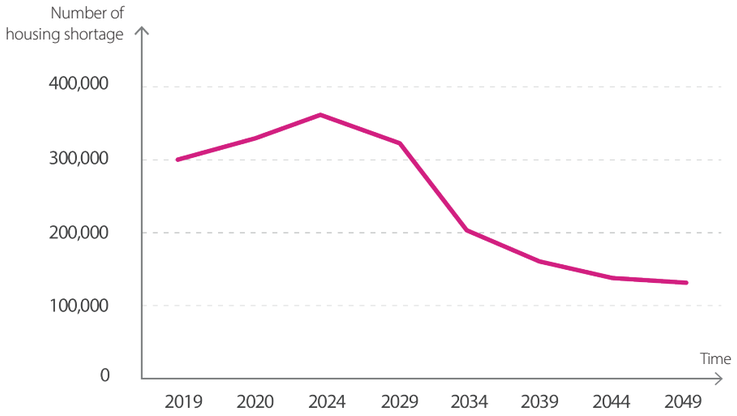


Train network, 2022

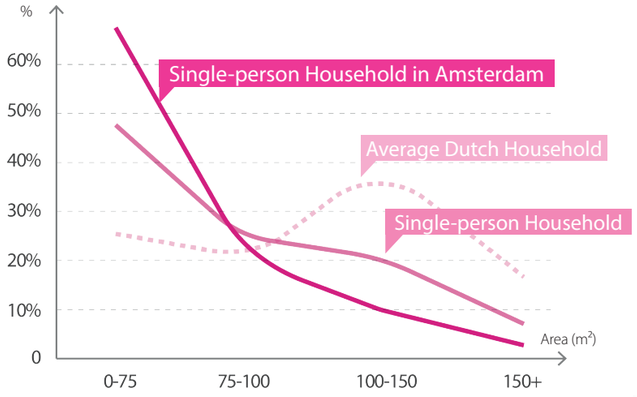
- Major stations
- Branch station
- Train flow

No.1-The housing crisis

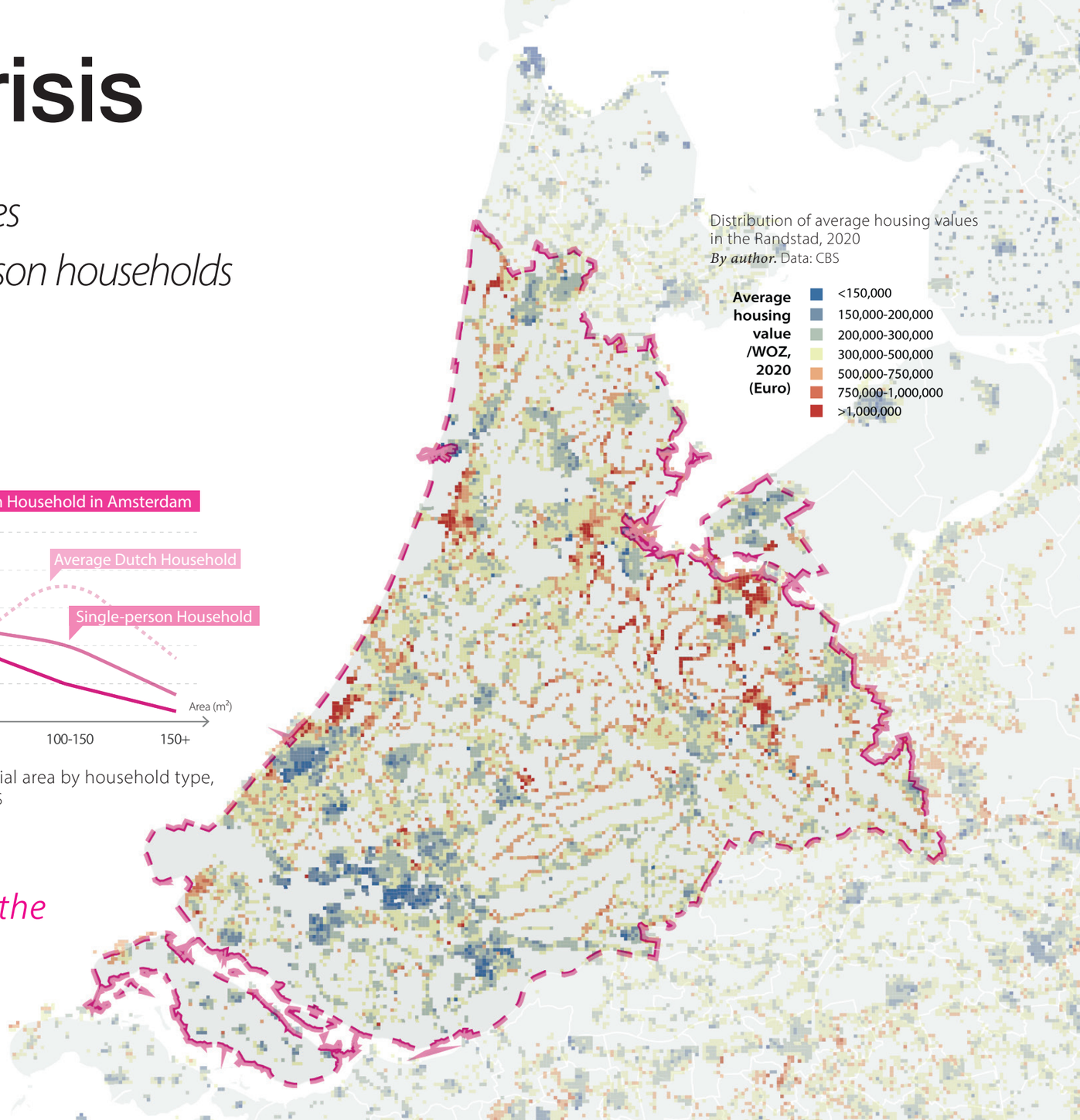
- *Areas with highest prices in the major Randstad cities*
- *Housing shortage, especially for younger, single-person households*



Expected housing shortage by 2050
By author. Adapted from (ABF Research, 2021)



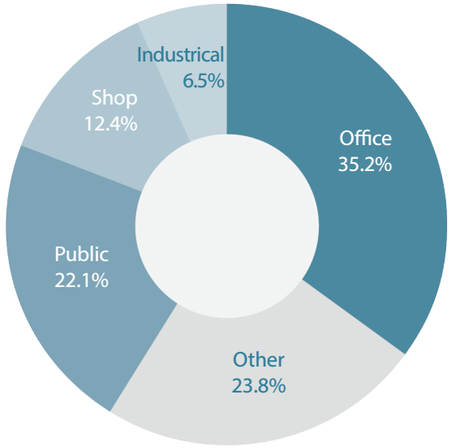
Distribution of residential area by household type, 2017.*By author.* Data: CBS



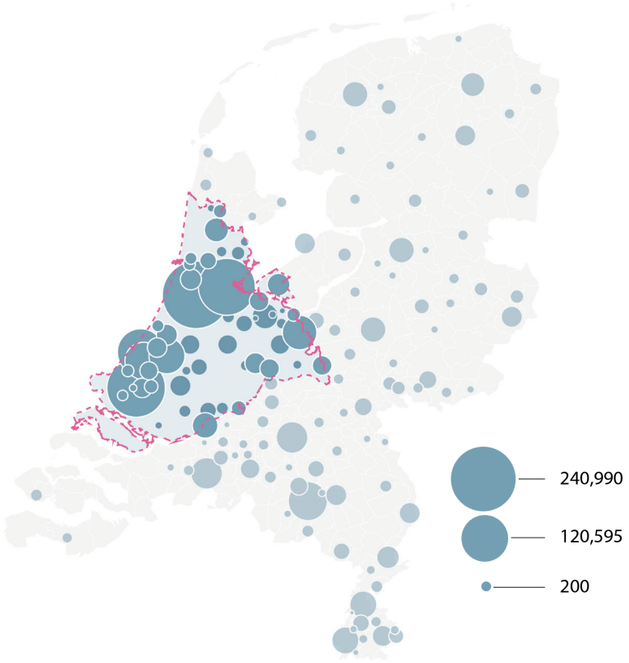
1,160,000 *dwellings to be added in the Netherlands by 2035*

No.2-Vacant offices

• *Especially in the surrounding municipalities of the major cities*



Previous functions of residential transformations, 2020 (%).*By author.* Data: CBS



Office area vacant for more than 1 year, per municipality, 2021 (m^2). *By author.* Data: CBS

7,600,000m² *Offical and hidden vacant office area in NL 2022*

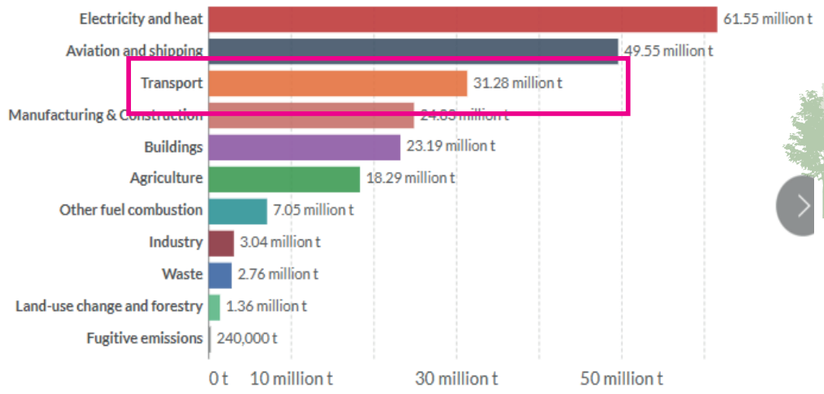
Distribution of office areas that are vacant for more than 1 year.
By author. Data: CBS

Office area vacant for more than 1year, per municipality, 2021 (%)

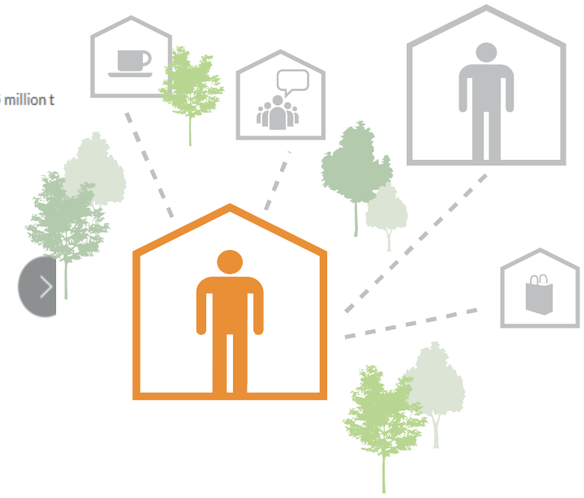
- Unknown
- 0%-5%
- 5%-10%
- 10%-15%
- 15%-20%
- 20%-25%
- >25%

No.3-Massive commuting

- *The Randstad cities are the centres of commuting flows*
- *Emissions ; air & noise pollutions*
- *Results in "the insolation of personal life"*

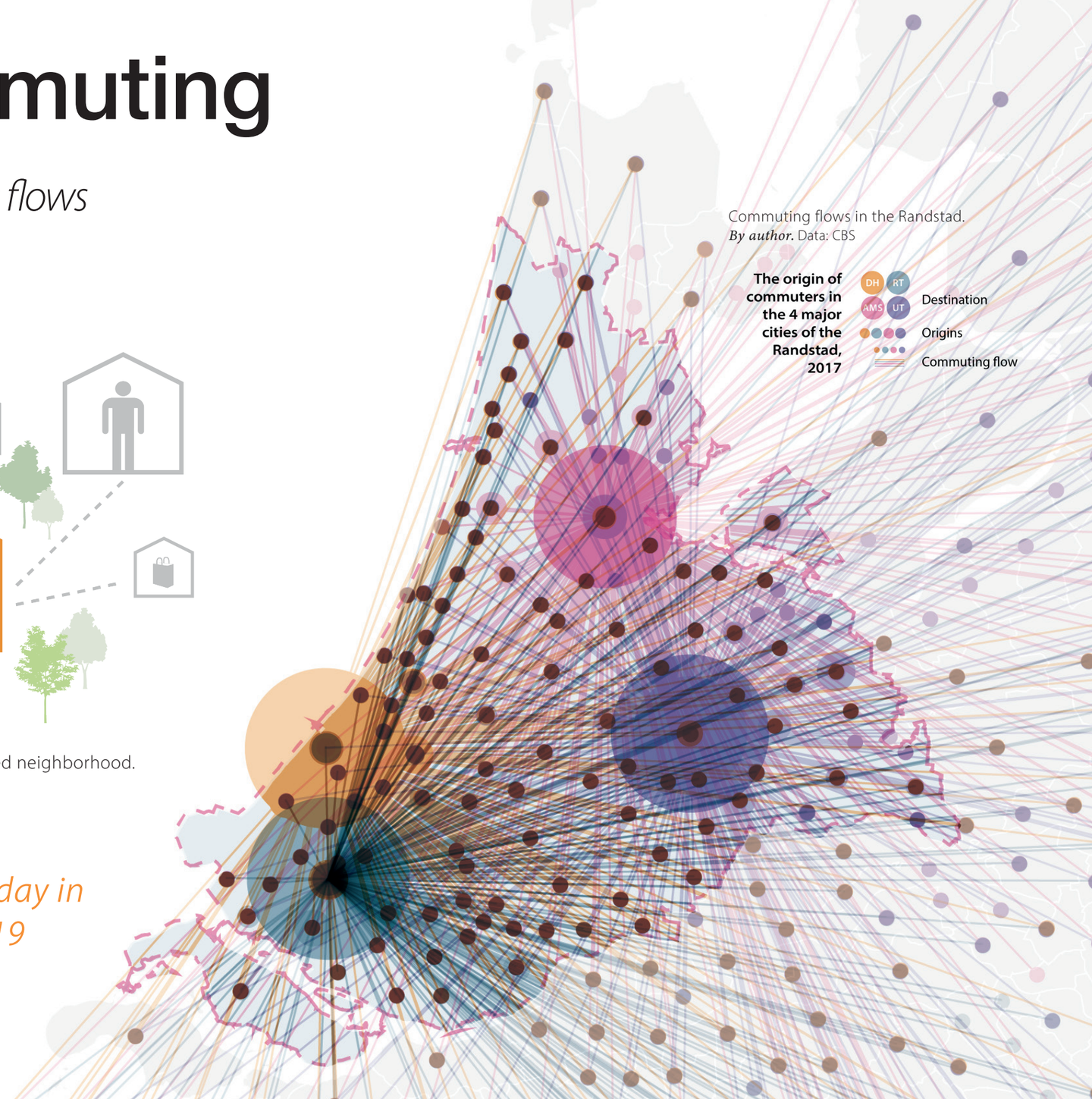


Transport section is the 3rd generator of green-house gas emissions in the Netherlands, 2019 (%)
Our World in Data.



Weakened & detached neighborhood.
By author.

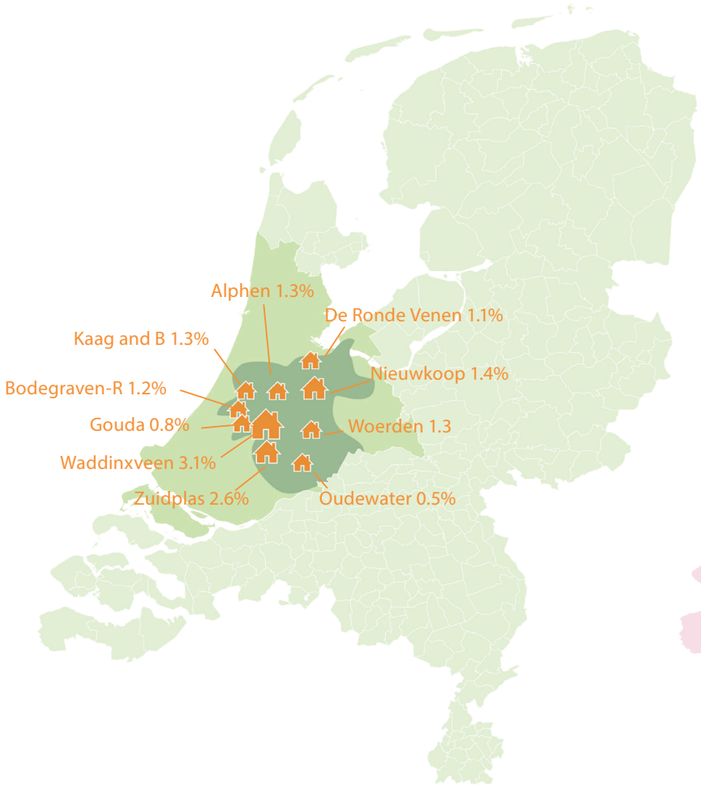
1,348,213 *Number of trips per day in the Netherlands, 2019*



Commuting flows in the Randstad.
By author. Data: CBS

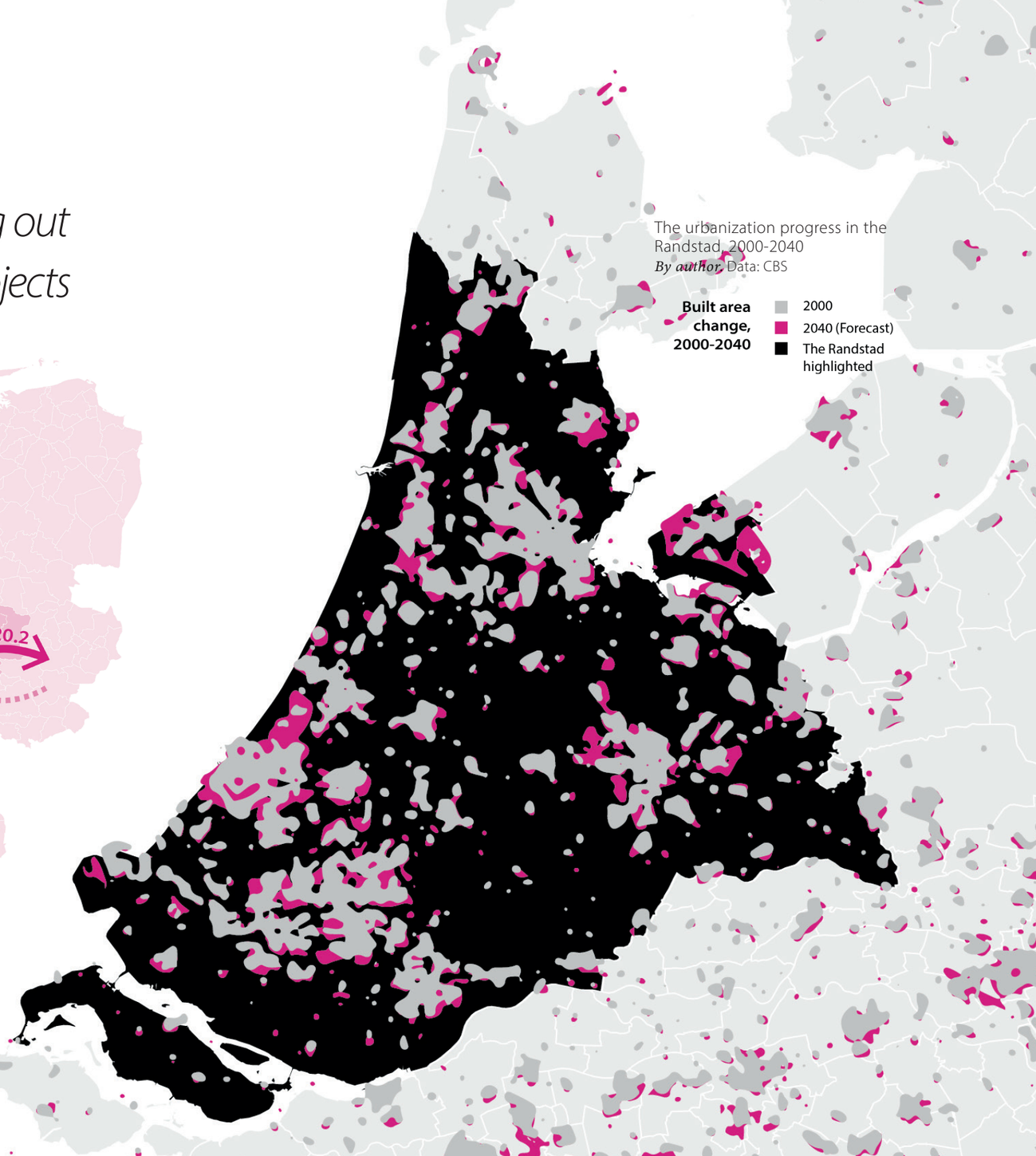
No.4-Urban Sprawl

- *The Randstad is becoming one; more people are moving out*
- *The Green Heart is being threatened by new housing projects*



Ten out of ten fastest growing housing stocks are in the Green Heart, 2020
By author. Data: CBS

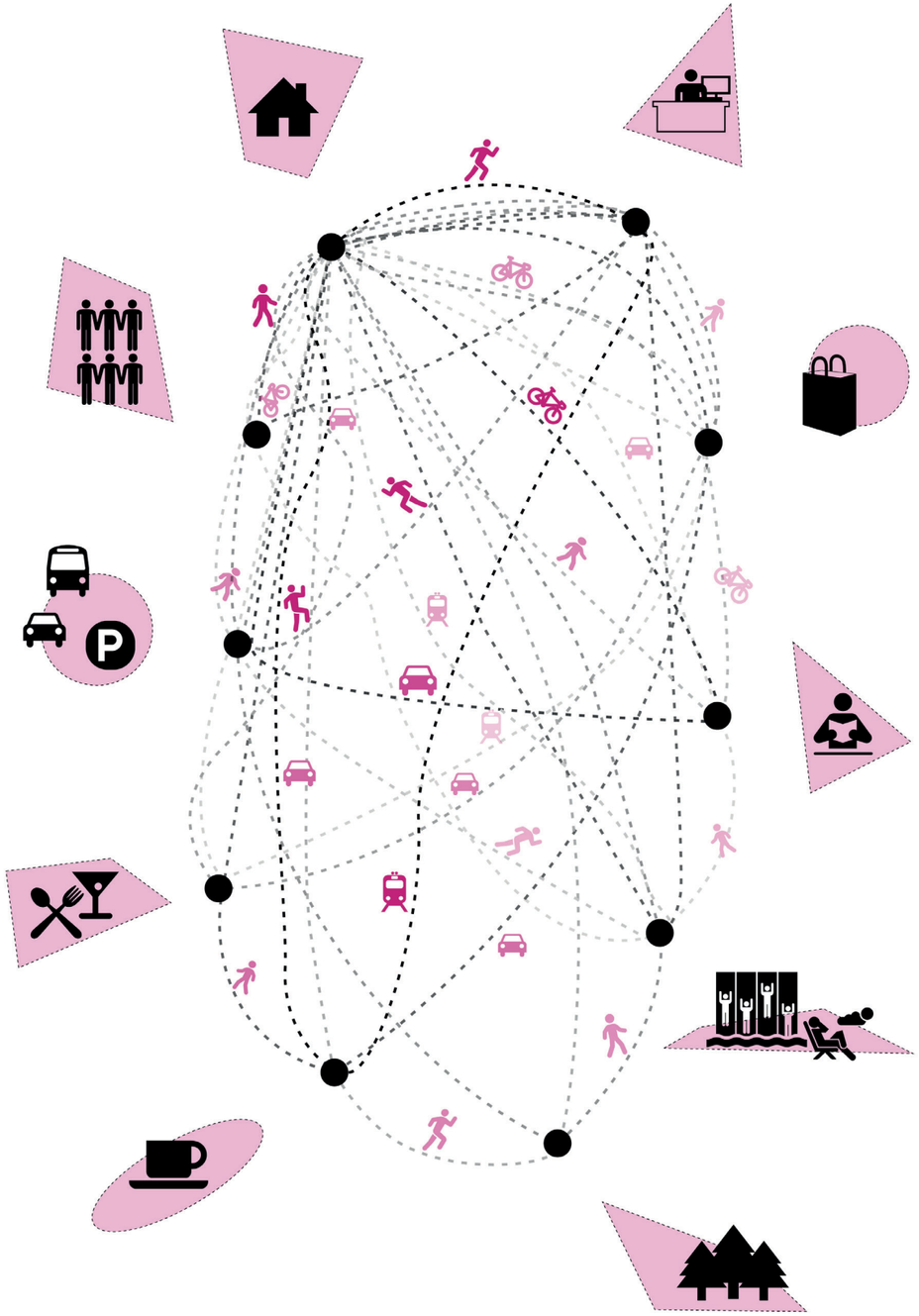
People are moving out of the Randstad (numbers: thousand ppl)
By author. Data: CBS



The urbanization progress in the Randstad, 2000-2040
By author. Data: CBS

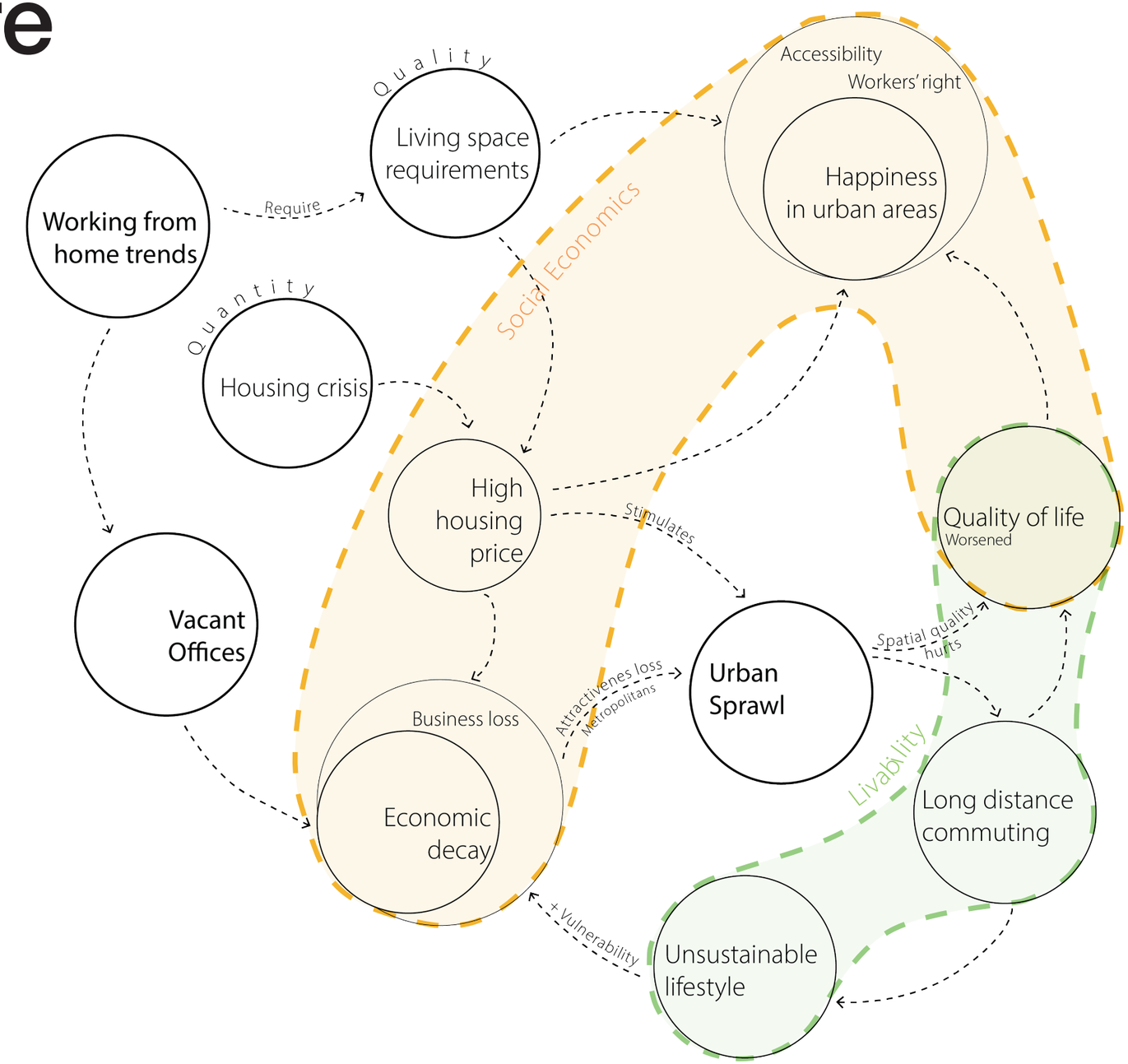
The quality & diversity of metropolitan life is increasingly questioned

- *As people find themselves struggling among various destinations to find their places to stay*



The challenges are interrelated

- **Housing crisis**,
- **Vacant offices**,
- **Expansive development**,
- **Commuting patterns**,
- **Quality of life** and **happiness in urban areas**,
- **Unlivable** and **unsustainable lifestyle**.



Research question

How can we take advantage of the new working patterns to transform monofunctional business districts into multifunctional and human-centred urban areas, therefore contributing to the alleviation of the problems of:

- 1. The ongoing housing crisis;
- 2. The lack of quality and diversity of urban life in metropolitan areas of the Randstad?

In this process, the transition will further provide solutions to the following problems:

- a. The excess of vacant office space;
- b. The tendency for urban sprawl;
- c. The unsustainable commuting patterns and lifestyles of workers.

Analysis

Sub-question 1
What are the spatial, social-economic, and environmental impacts of the current work-life pattern that might change in the future with hybrid work?

Exploration

Sub-question 2
What design options can help maximize the benefits of hybrid work to facilitate a human-centered, live-work neighborhood?

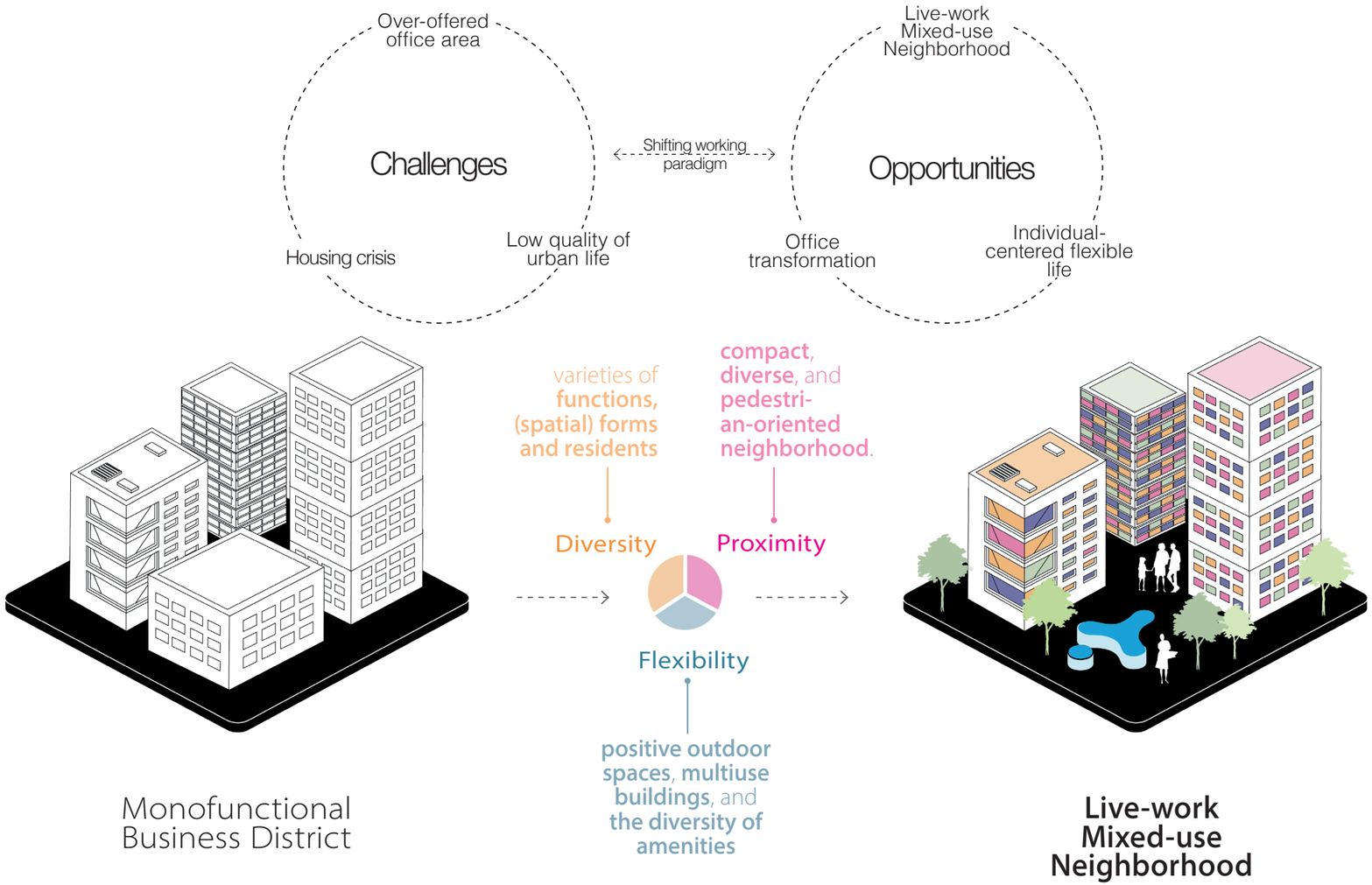
Test

Sub-question 3
How to apply the options and transform a business district as an example in Hoofddorp?

Reflection

Sub-question 4
How does the transition respond to the changing external conditions and what are the factors to consider?

My answer: office transformation



Why is a live-work neighborhood different?

15-minute city. *MoveBuddha.*
https://www.movebuddha.com/blog/15-minute-cities/

- Focuses on the access to functions
- In highly urbanized areas (centers)
- Short-time interventions

- Focuses not **on the efficiency** of mobility but the **experience and overall quality of life**
- In **"unprepared" areas** for **transformation**
- Richness & configuration of facilities

The live-work-play concept. *Archdaily.*
https://www.archdaily.com/515091/live-work-play-an-exhibition-of-local-award-winning-architecture-from-south-england/539872c-0c07a80569e000684-live-work-play-an-exhibition-of-local-award-winning-architecture-from-south-england-image

- Focuses on the mixed use of buildings
- Applied on residential complexes and towers, in downtown/central areas

- Aims at the **scale of neighborhood**
- Designs for transformation towards diverse neighborhoods

Start

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The Randstad

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Methodology

Urban foresight

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The Vision & Beukenhorst 2073

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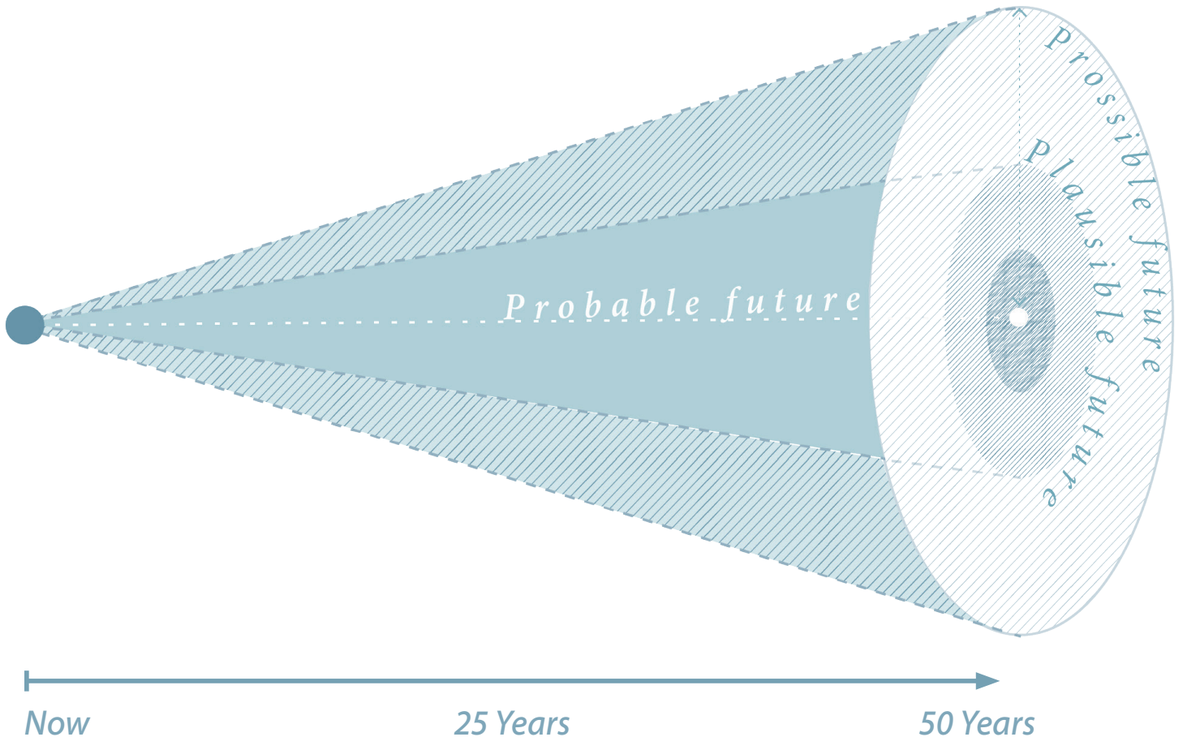
Urban foresight: 50 years as the timeframe



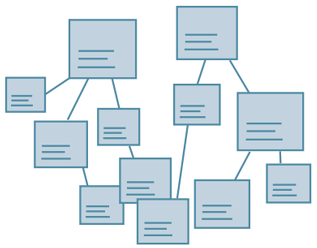
- The shift of lifestyle, the establishment of supportive policies and organizations, the transformation in the built environment, all take time to happen
- Urban foresight: the methodology for exploring long-term future, which sees the future as a range of possibilities

The techniques...

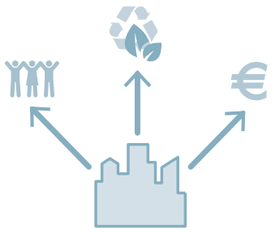
- Reference: The UK Government Office for Science
- Future of Cities: Foresight for Cities, A resource for policy-makers

Visioning

Creative Visioning

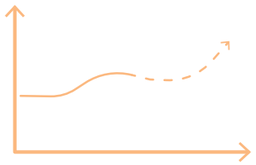


Aspiration Mapping

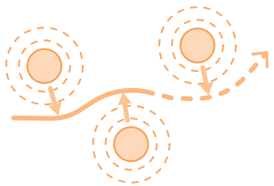


Scenarios

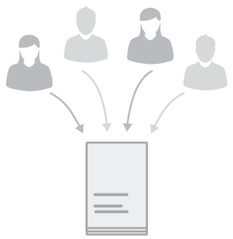
Analyzing



Trends & Projections

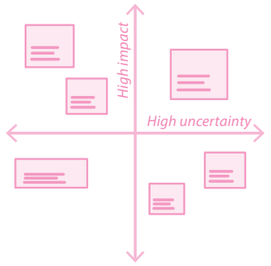


Drivers of Change



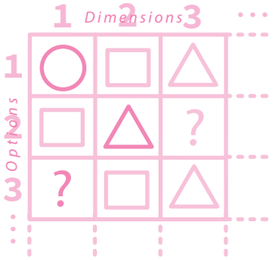
Delphi Panel

Designing



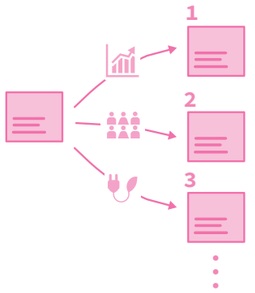
Uncertainty Analysis

Group Discussion



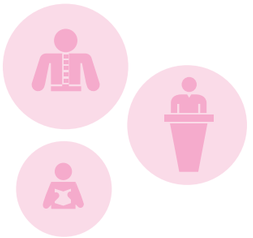
Menu of Options

Testing



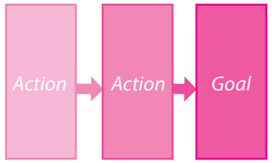
Alternative Paths

Quantitative Assessment

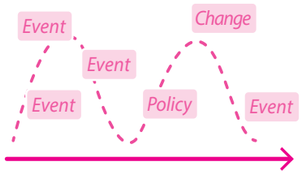


User persona

Assembling



Backcasting



Roadmapping

Case study

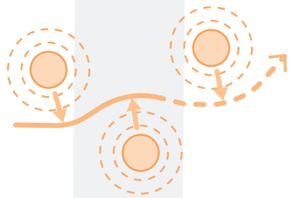
Research based
Design based
Not applied in this project

Foresight techniques. *By author.* Interpreted from (Government Office for Science, 2016)

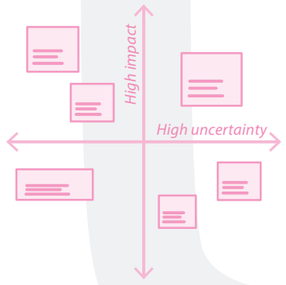
...Selected for this project

Creative Visioning

Trends & Projections



Drivers of Change

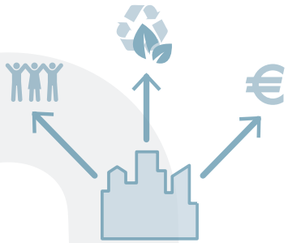


Uncertainty Analysis

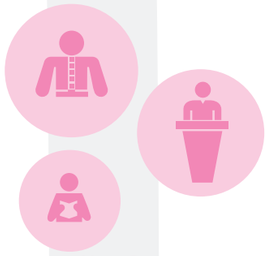
Research based

Design based

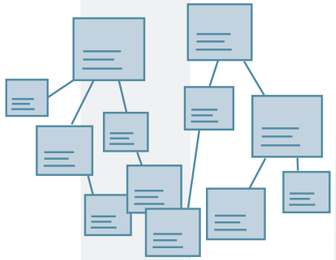
Figure 3.8 Foresight techniques applied in the project. *By author.*



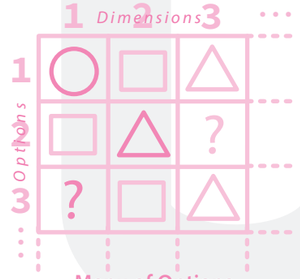
Scenarios



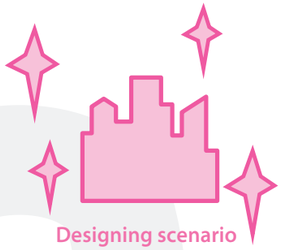
User Persona



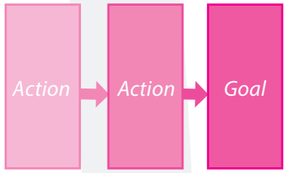
Aspiration Mapping



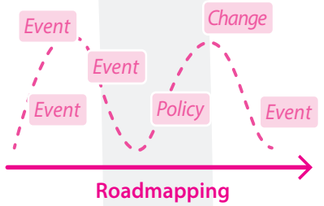
Menu of Options



Designing scenario



Backcasting



Roadmapping

Alternative Paths

The Vision

What kind of future are we exploring?

The future is a world where hybrid working frees people from the demands of commuting and fixed schedules, allowing them to **build close collaborative relationships in their communities**. Neighborhoods are a mix of living, working and other functions, that are **all-day-round inhabited**. **Housing affordability** increases as a result of office transformations. Flexible schedule shakes up gender stereotypes especially in terms of chores and childcare, offering hope for **improving gender equality**.

https://taitokerau.timebanks.org/

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https://globaldesignnews.com/3xn-i-gxn-and-gehl-architects-envision-neighborhood-next-a-regenerative-15-minute-community-masterplan-for-san-diego-to-create-a-new-vibrant-urban-atmosphere/

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https://www.dutchnews.nl/news/2022/10/dutch-house-price-rises-are-among-highest-in-the-eu/

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https://bigthink.com/the-learning-curve/stay-at-home-dad/

What elements of change are needed for such a future?

Such a desirable future is made possible through the **transformation of office districts** with the three prerequisites:

- **80% remote hybrid working**
- **New concepts of working space**: combination of office, home and third places
- **Building of hybrid-working supportive live-work neighborhoods**, with the emphasis on proximity, flexibility and diversity.

It is possible: 80% remote hybrid working and new working space

- At the end of 2020, **48%** of workers work from home in NL
- **66%** can be achieved with adjustments in working environments
- **66%+** is possible **considering the decreasing industries**.

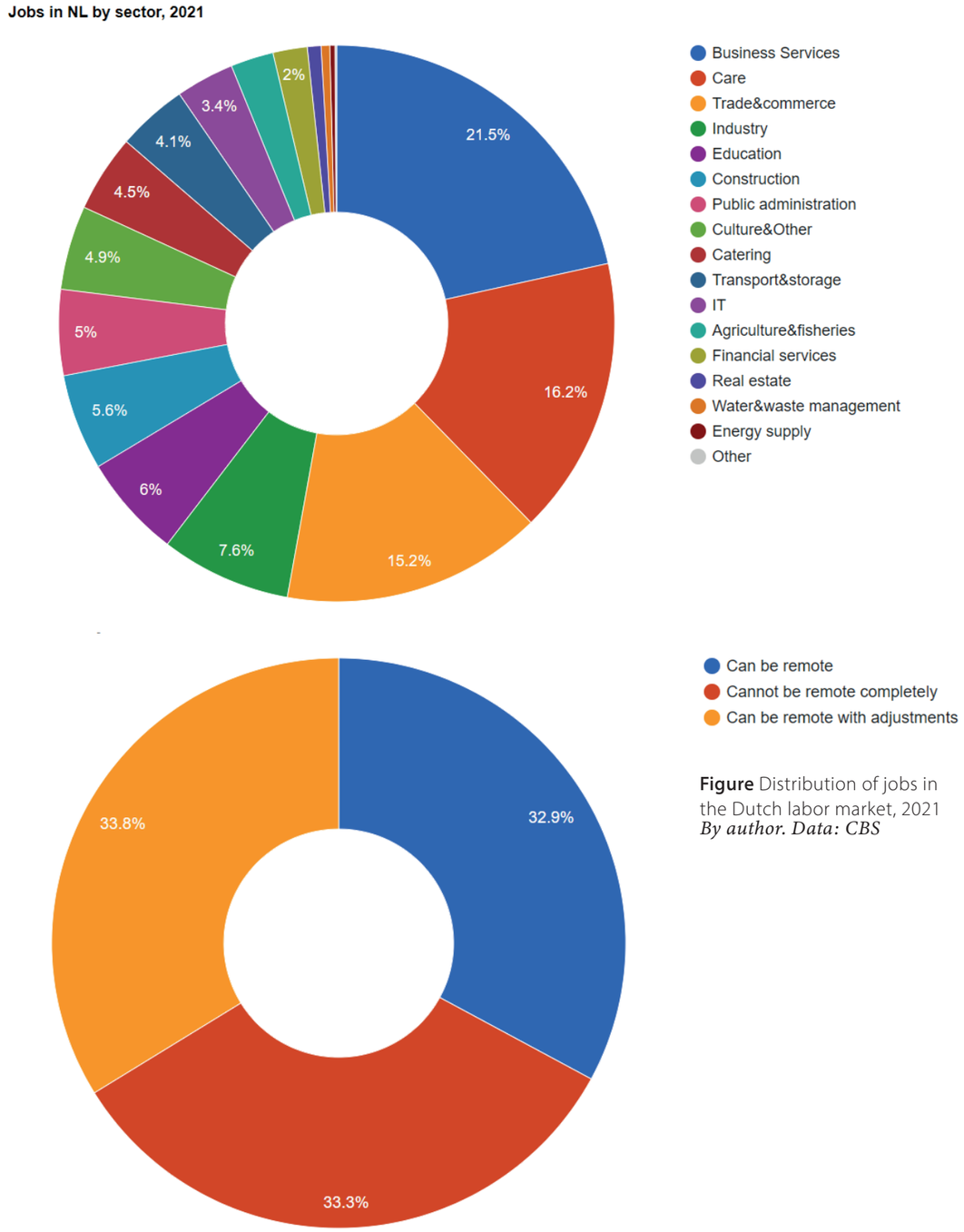


Figure Distribution of jobs in the Dutch labor market, 2021
By author. Data: CBS

It is possible: 80% remote hybrid working and new working space

"The future of hybrid working is that no one will be working only in one fixed location."

Technology and innovation in the hybrid age (JLL Global Research, 2022).

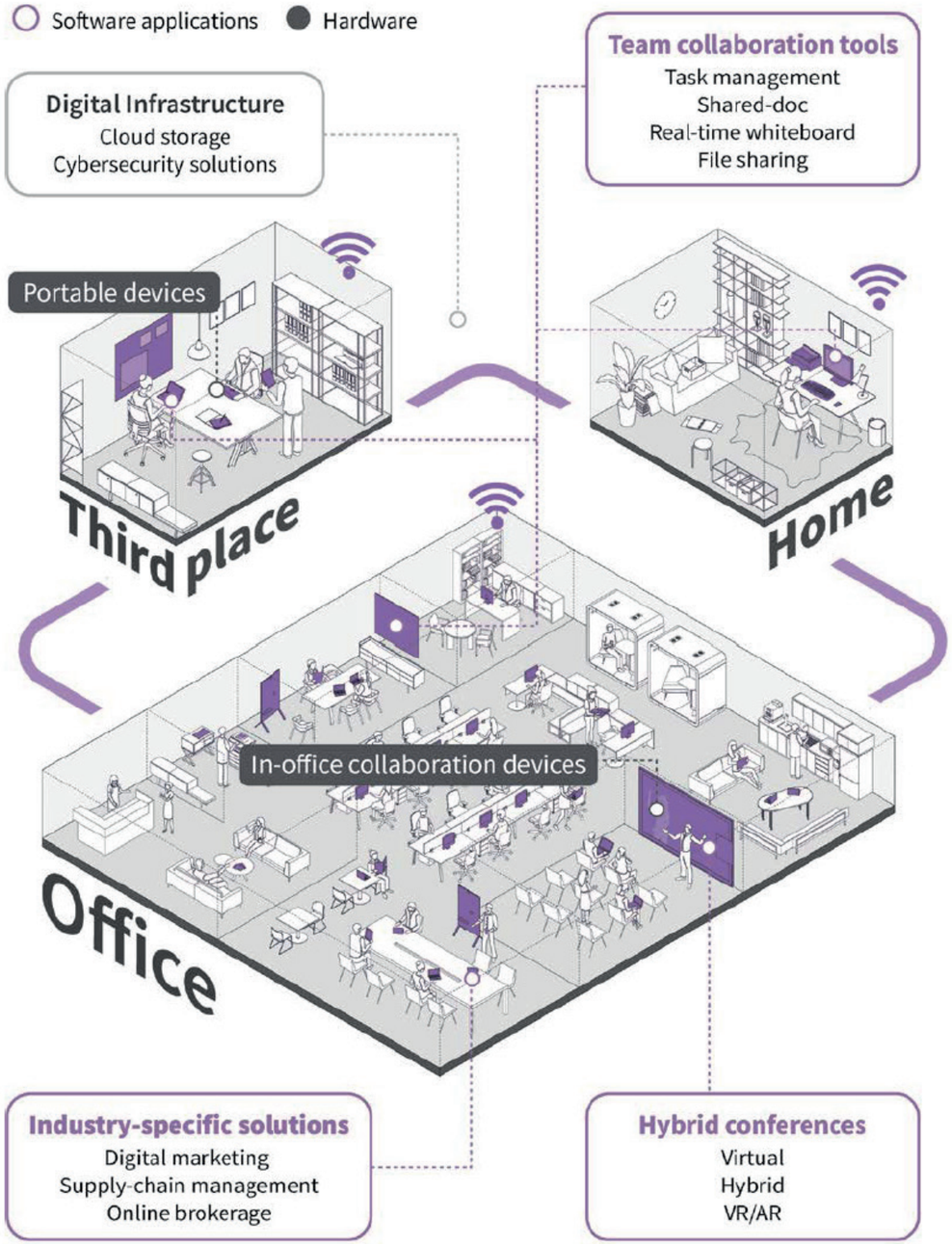


Figure The future of hybridwork.
JLL (JLL Global Research, 2022).

What about building a live-work neigh-borhood?

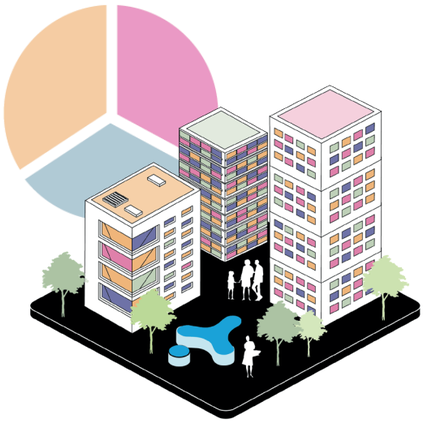
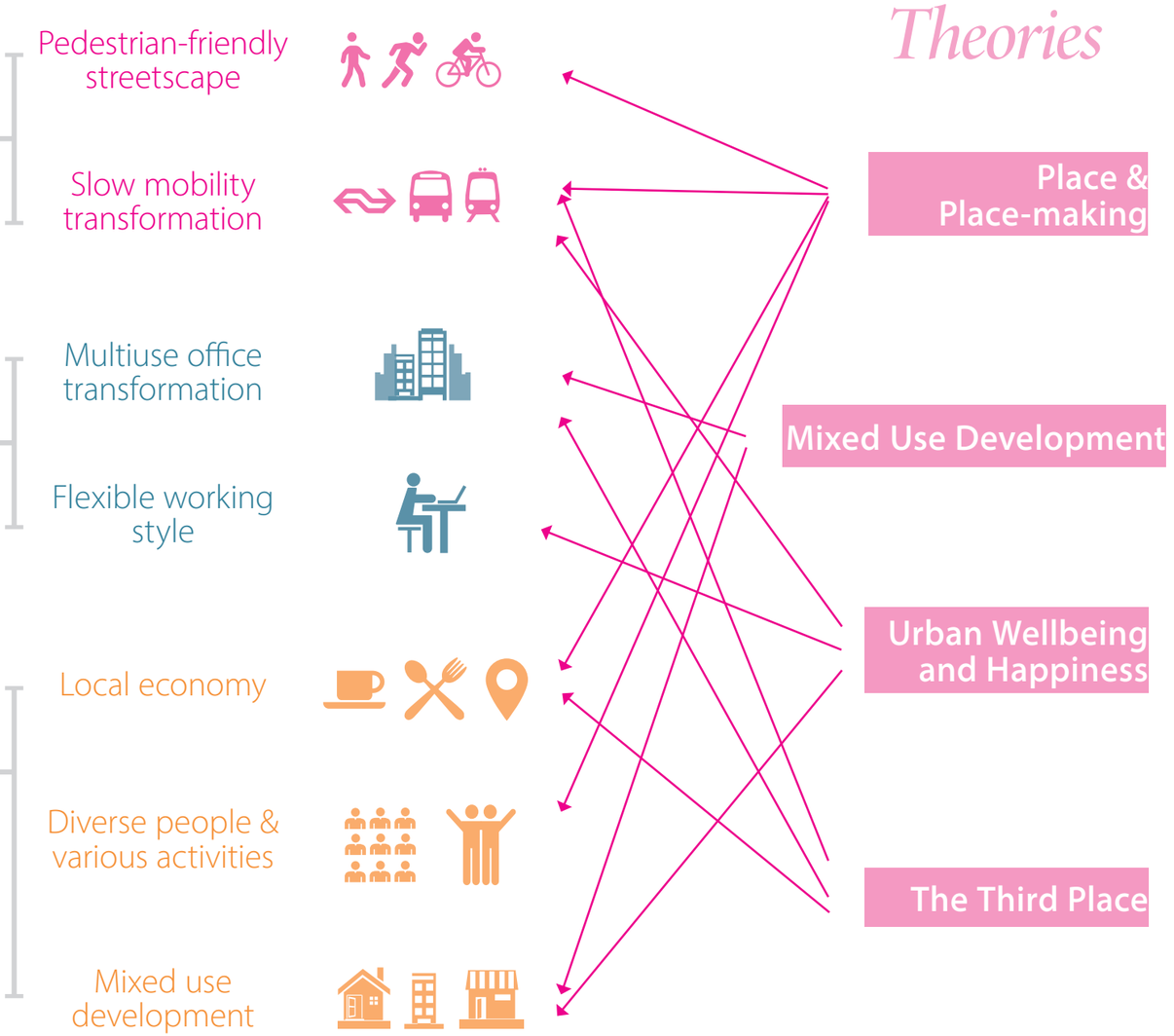
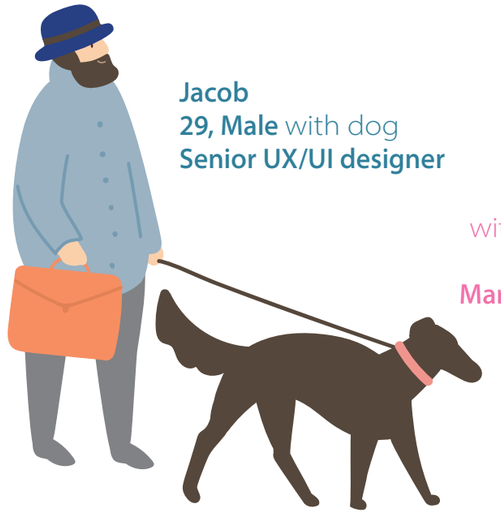


Figure 4.4 Live-work mixed-use neighborhood.
By author.



Let’s look at it from the residents’ perspective



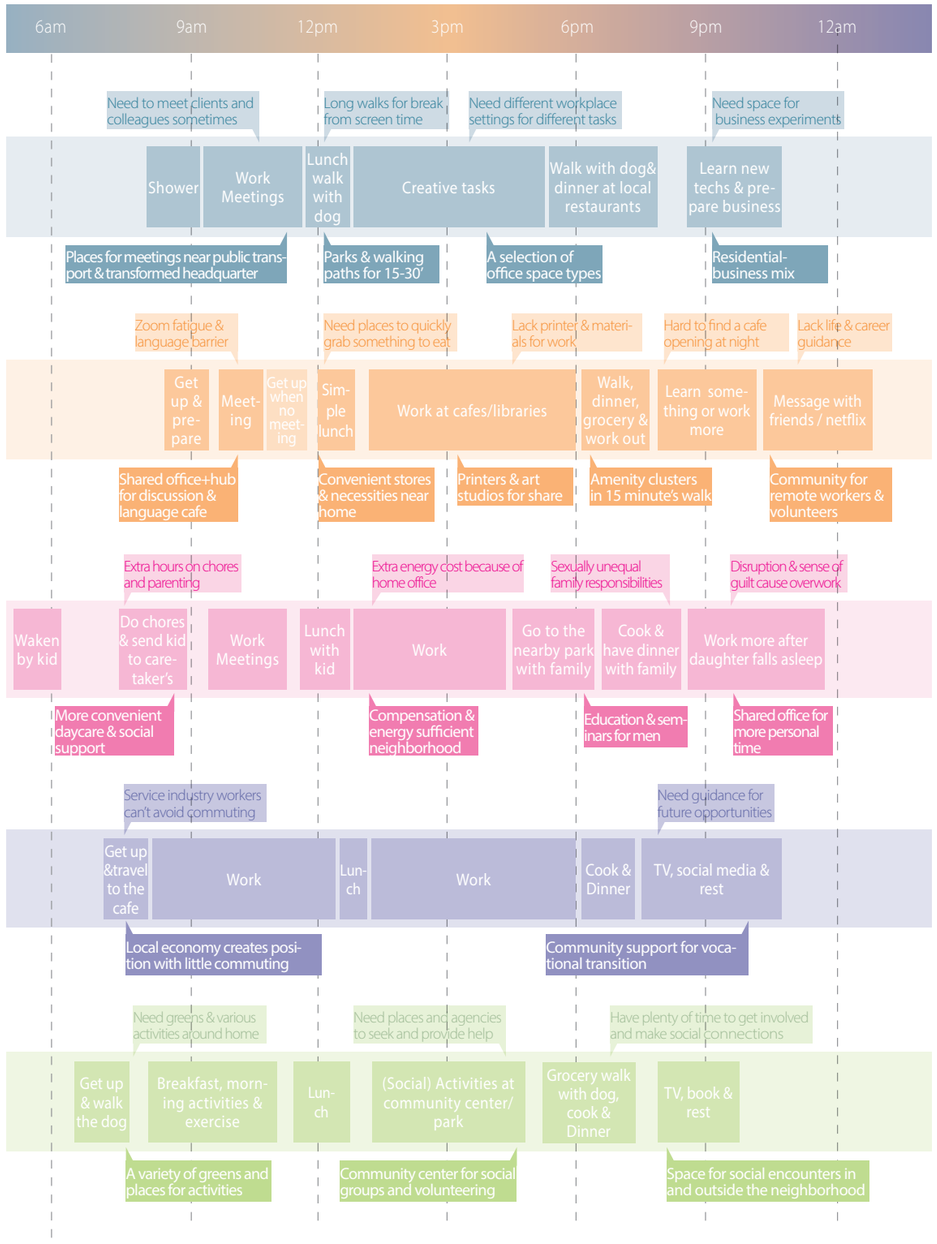
Jacob
29, Male with dog
Senior UX/UI designer

Anne
24, Female
with boyfriend
Waitress

Stella
32, Female
with partner & 3 yro daughter
Marketing Consultant

Maruko
26, Female single
Architect

Hendrik
70, Male with partner, adult children, and a dog
Retired; Home owner

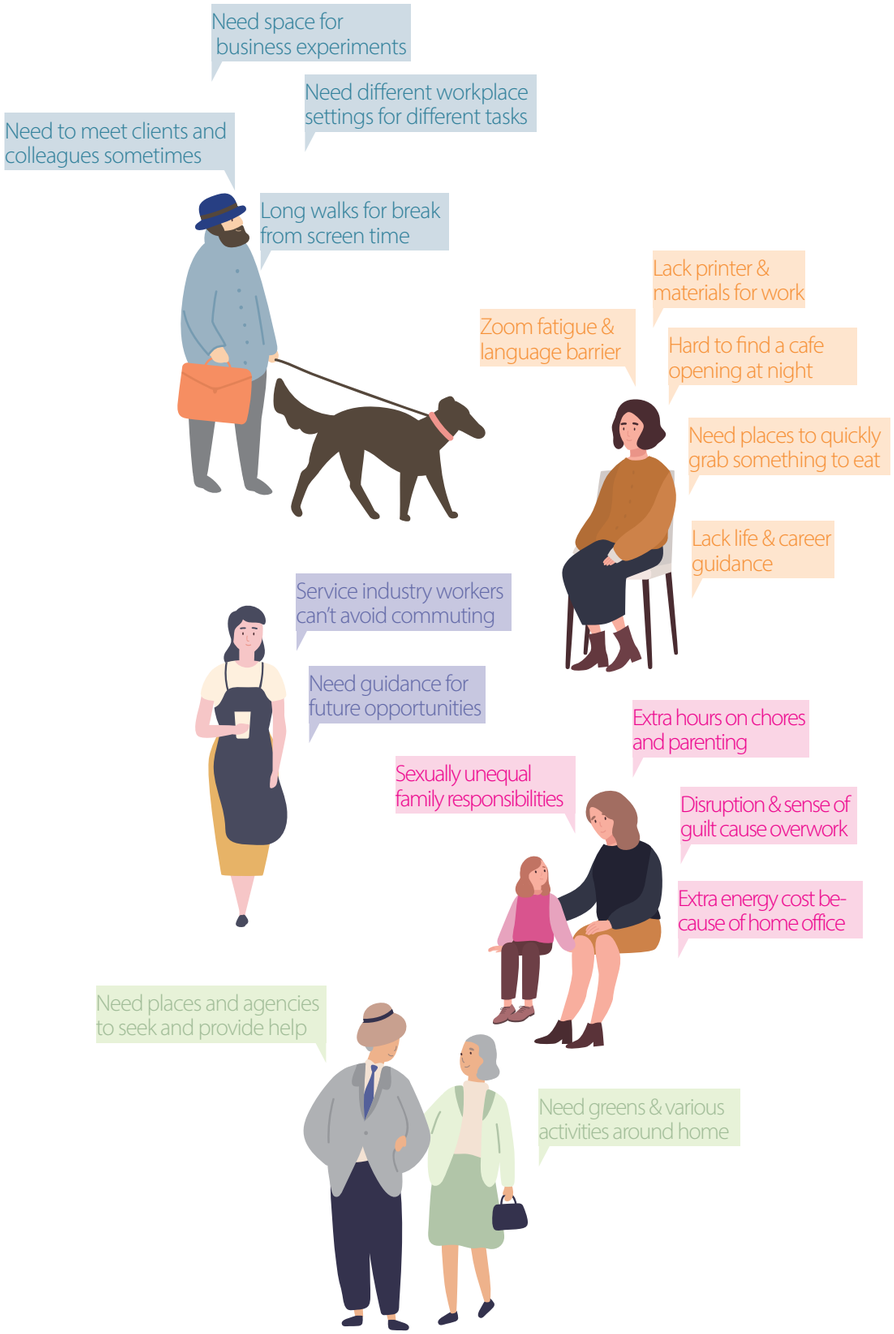


We can conclude from their experiences the challenges of the hybrid working future...

Inadequate space for work

Stress & Isolation

Living & family impacts

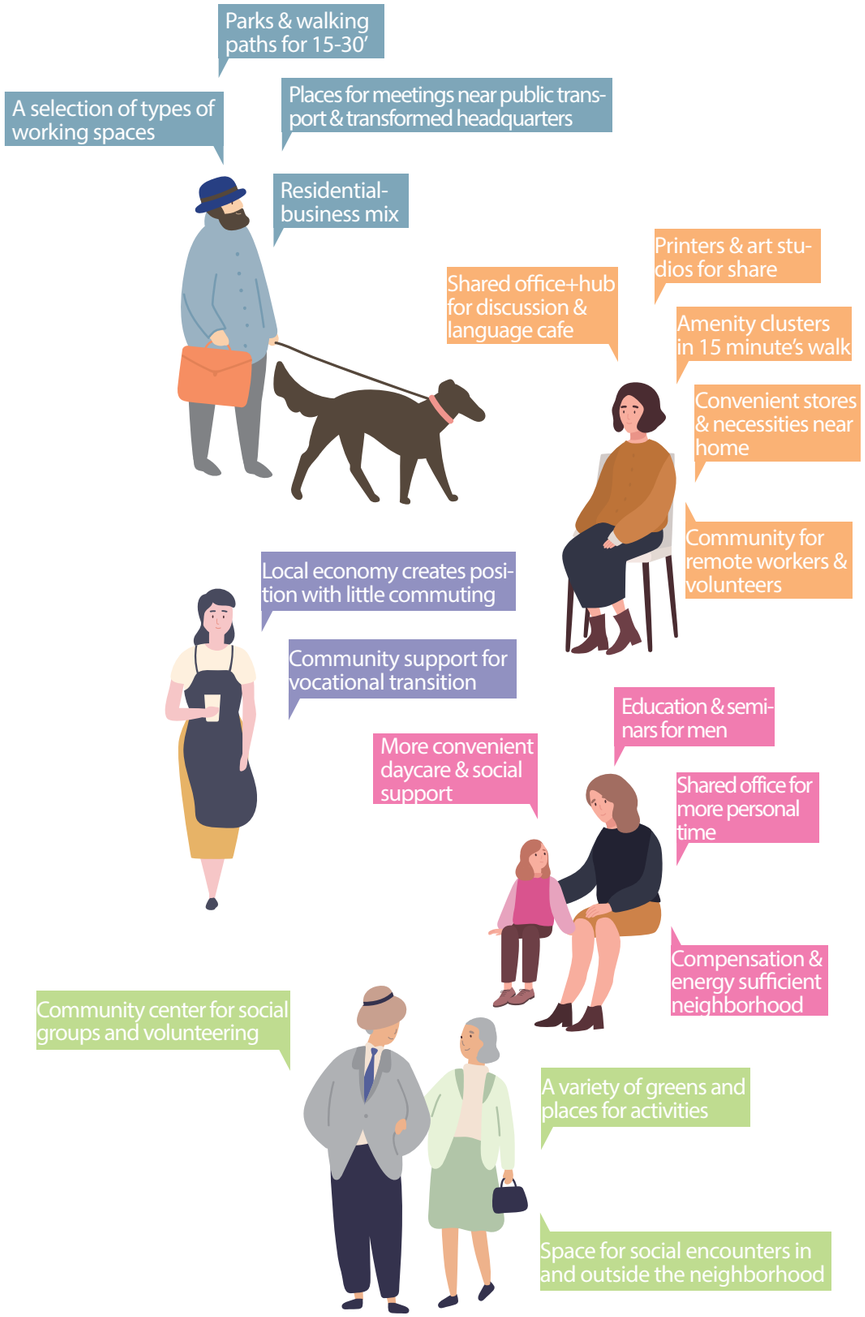


...and the qualities needed for a live-work neighborhood

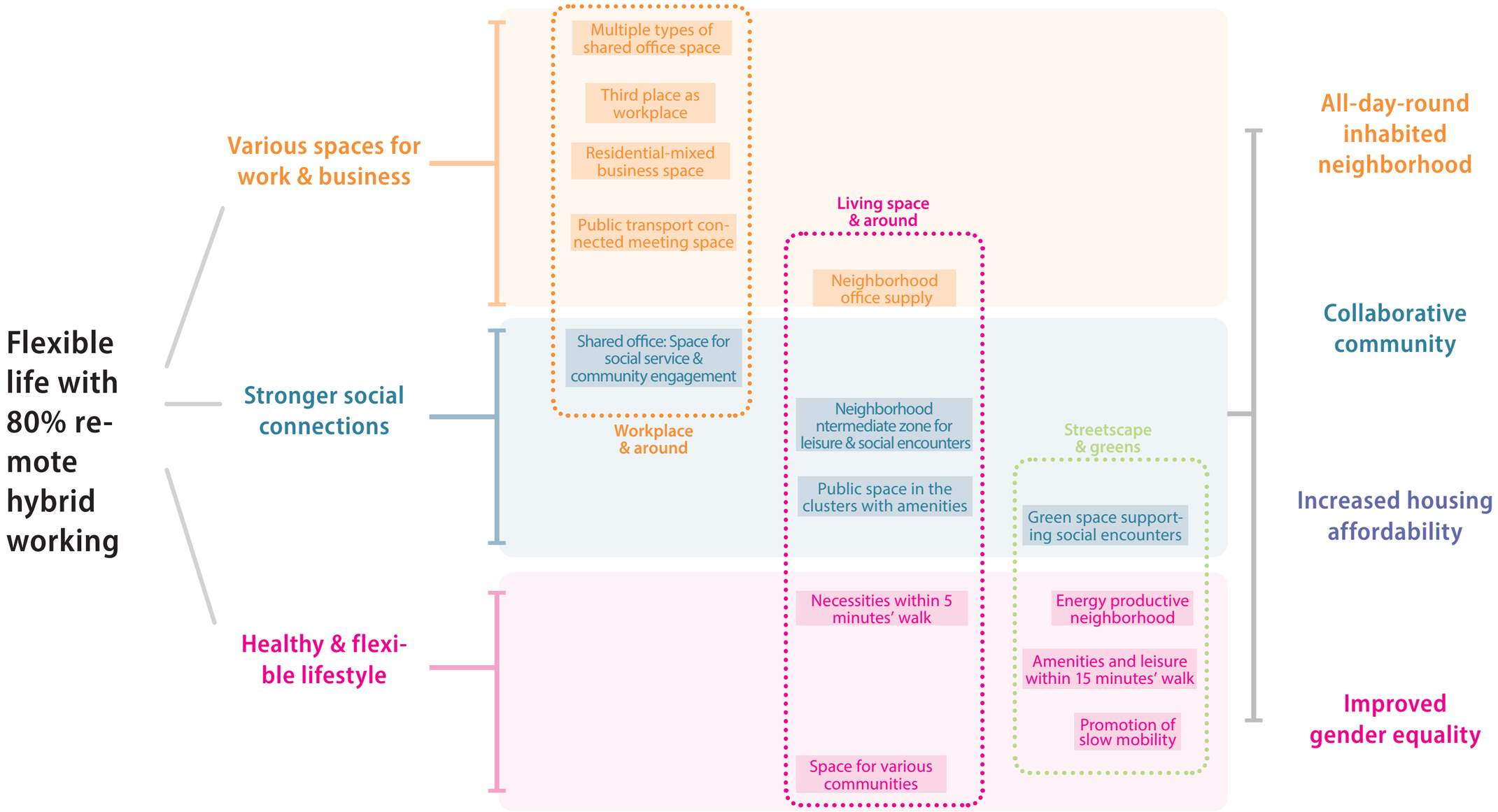
A wide selection of office space

Fostering social connections

Healthy & flexible lifestyle

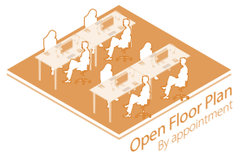


The map of aspirations



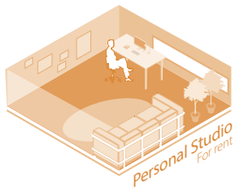
Menu of Options

Space for work



Variety of shared office space

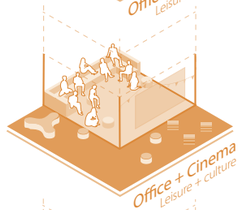
Various types of office space with different spatial characteristics are created to meet the different needs of people in various industries.



Office build-ings

Social hub "Shared office +"

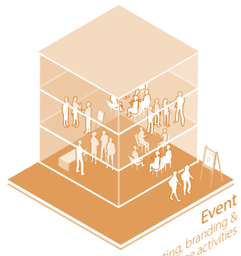
Shared office spaces can be combined with other functions to provide a variety of services for the people who gather there. With transformation to support communication, they can serve as platforms for community support and enhanced interaction within communities.



Special buid-ings

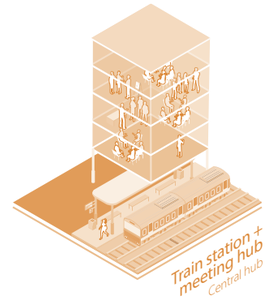
Head-quarters

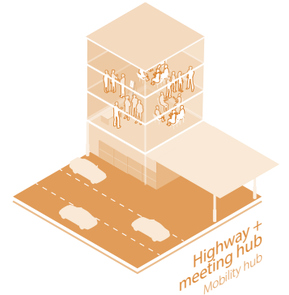
As the demand for office space decreases, large companies will be happy to renovate, lease or sell their headquarters (or at least parts of them) as they cut back on expenses. These headquarters have the potential to become public spaces, which can also be a part of the companies' brand marketing tools.

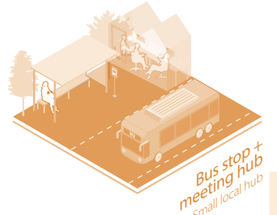


Mobility + meeting hub

There is no substitute for efficient communication of offline meetings. Meeting hubs connected to public transport can maximize the convenience and sustain-ability of this inevitable commuting.







Work-place and Around

Menu of Options

Space for living

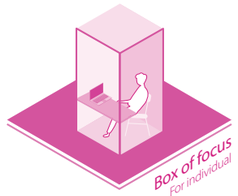
Amenities

In the 80% remote working lifestyle, the hierarchy of amenities is reconsidered. Convenience together with leisure and social activities are all important elements for the new system.

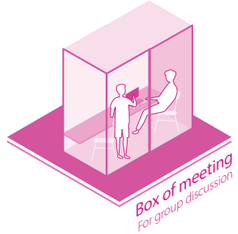
Social encounters near home

The motor lane right in front your home will never return. The space around the house has a more important leisure, social and public function, providing space for people who want to relax from their work.

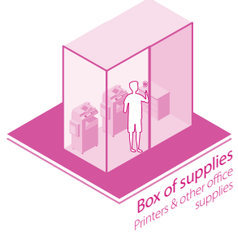
Live-work space

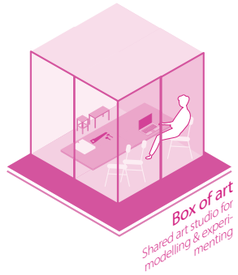


Neighborhood office supply



Some industries have specific requirements for office space and materials. There are also people who just have a hard time getting focused. Or maybe your co-worker is your neighbor and you need to meet and discuss. These little boxes offer more possibilities for working from home.





Third place as workplace

Cafes are a popular alternative to offices.

Living space + business

Living + extension

The flexible use of residential space and its extensions can create ideal conditions for the local economy and entrepreneurs. It also has the potential of breaking the limits of business hours and openning up a 24/7 economy for supporting lives with flexible working hours.

Living

Space& Around

Menu of Options

Street-scape

Streets for slow mobility

Freeing the streets from the dominance of motor vehicles is not only significant for saving energy and reducing emissions, but also lays the foundation for the transformation towards healthy lifestyle. The new mobility model will serve as a smarter service by appointment.

Street for encounters

The street space is an important public space. Hybrid worker's habits of walking and exercising place a demand on the social function of the streets, and the spaces released from the motor lanes present many possibilities for transformation.

Access to nature

Variety of greens

From buildings, to neighborhoods, to regional scales, residents need to have plenty of options to enjoy green from near to far. Characteristic natural features, such as canals, must be protected and revitalized.

Greens for encounters

People need interactions with green spaces and water bodies. These natural spaces can be vibrant places for socializing, recreation and various activities.

Green for more

Energy sufficiency

Setting up energy-generating facilities in the neighborhood is beneficial for both of the environment and the residents' budgets.

Noise abatement

Planting specific types of trees to form a forest is an effective means of reducing noise.

Third place as workplace

Streets and natural spaces can also be third places. By conveniently setting up installations such as tables, chairs and free WiFi, these places can become great places for work.

Streets and greens

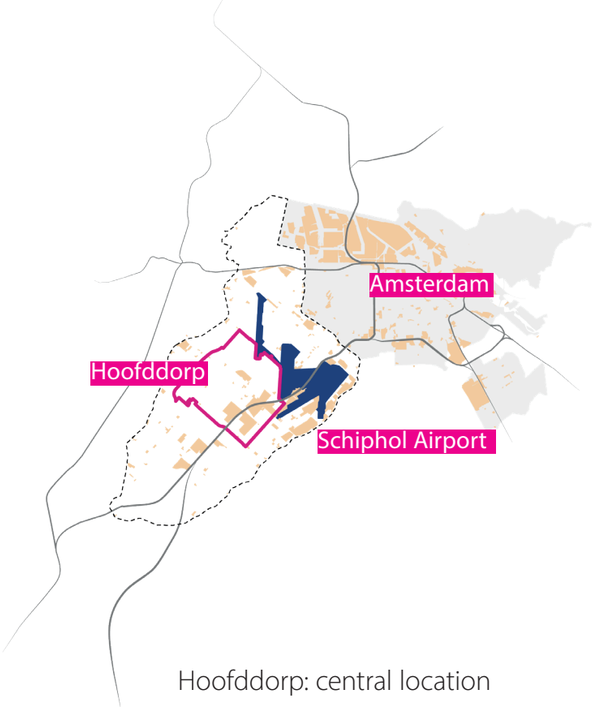
Beukenhorst 2073

Beukenhorst is an office district in Hoofddorp, just next to the Schiphol Airport

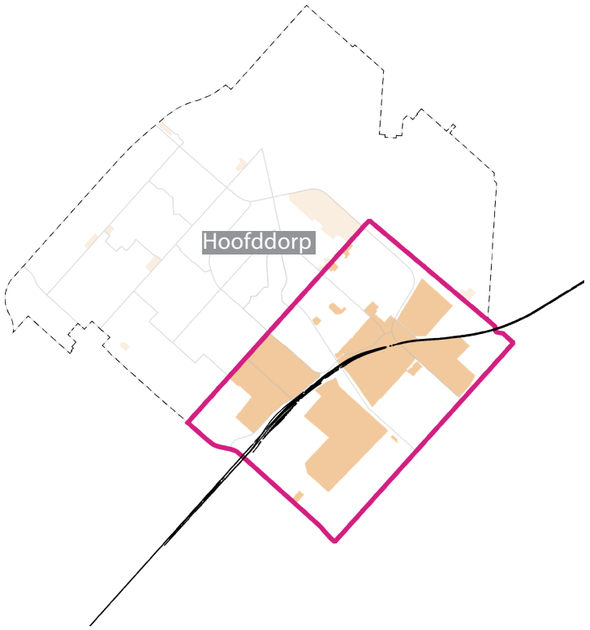
Business clusters (Office, warehouse, industrial land included)

Business parks

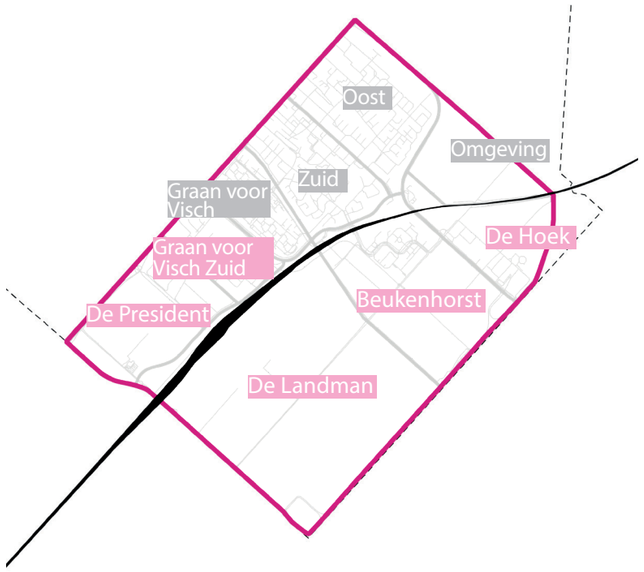
Figure Site location. *By author.*
Data: CBS, PDOK



Hoofddorp: central location



Business agglomeration in the east of Hoofddorp



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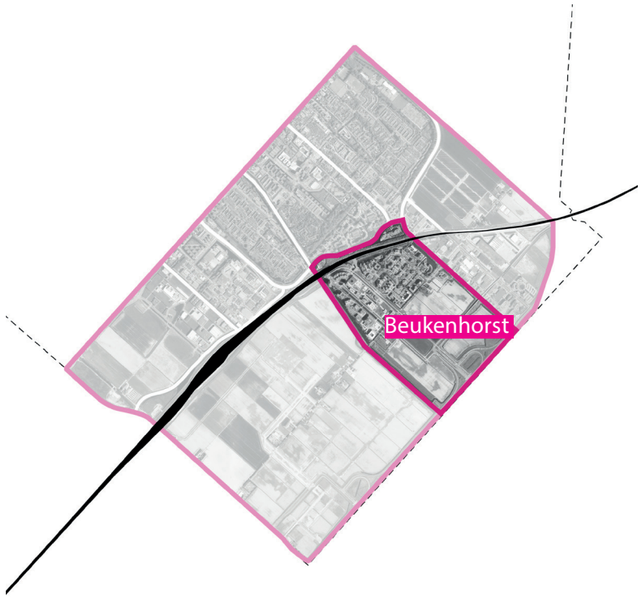

Beukenhorst

It’s an ideal testing site for the transformation

- It is the **most concentrated office district** in the municipality of Haarlemmermeer (where Hoofddorp belongs to)
- It is famous for being the location of **the majority of the vacant offices** in the municipality and beyond
- There have been **office transformation projects happening**

Figure Photos of Beukenhorst, Hoofddorp.
By author.

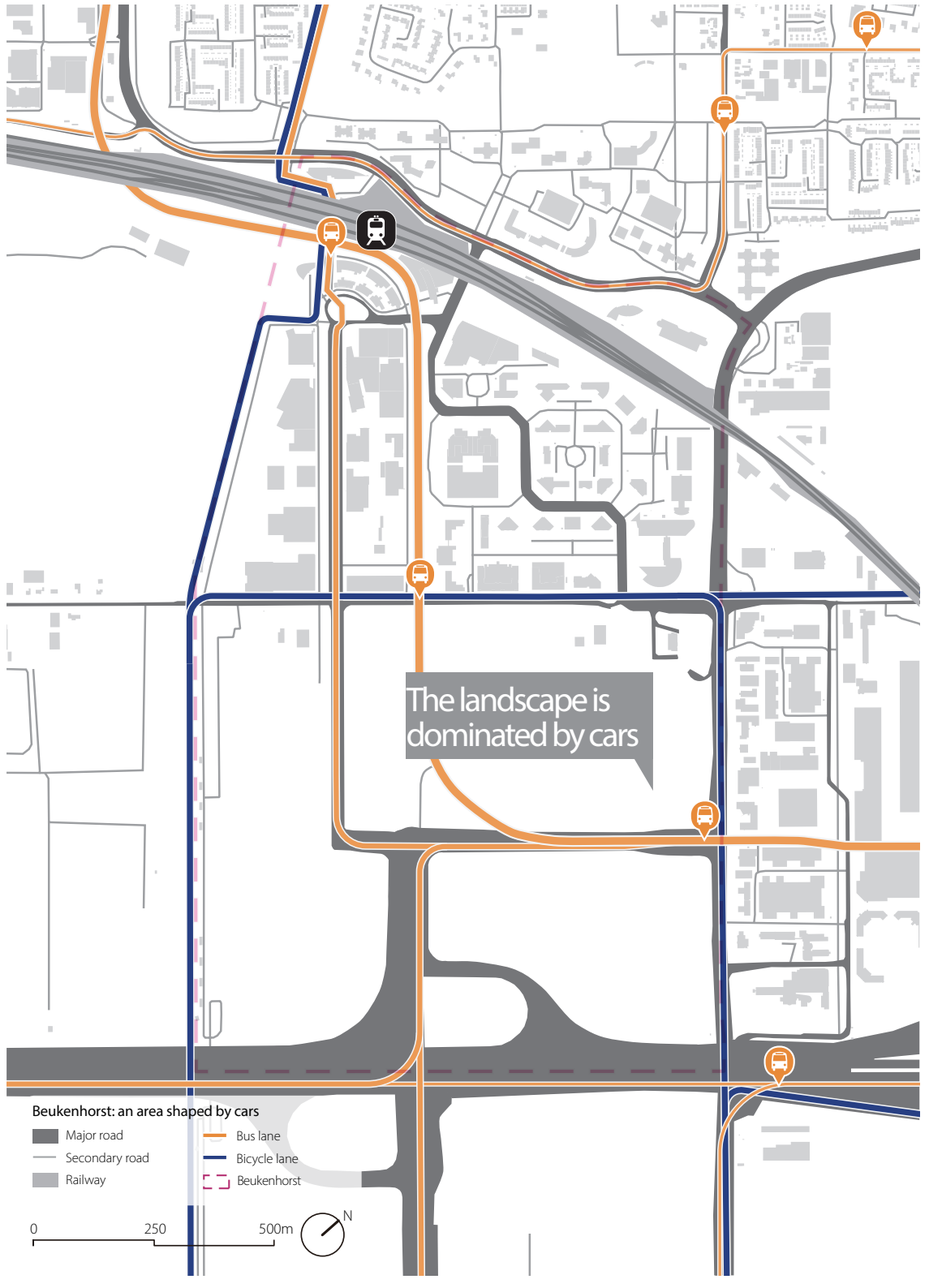

Figure Photos of Beukenhorst, Hoofddorp.
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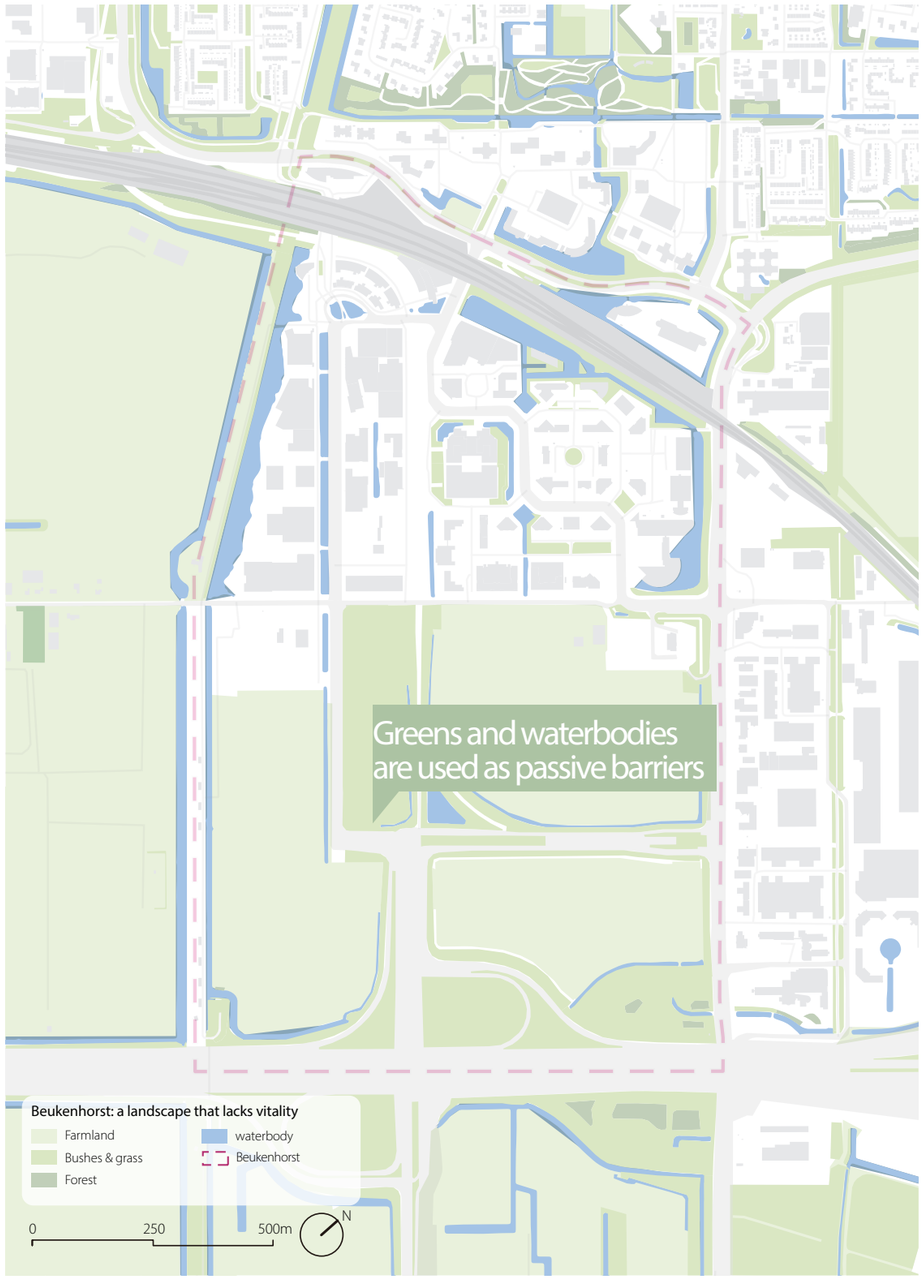
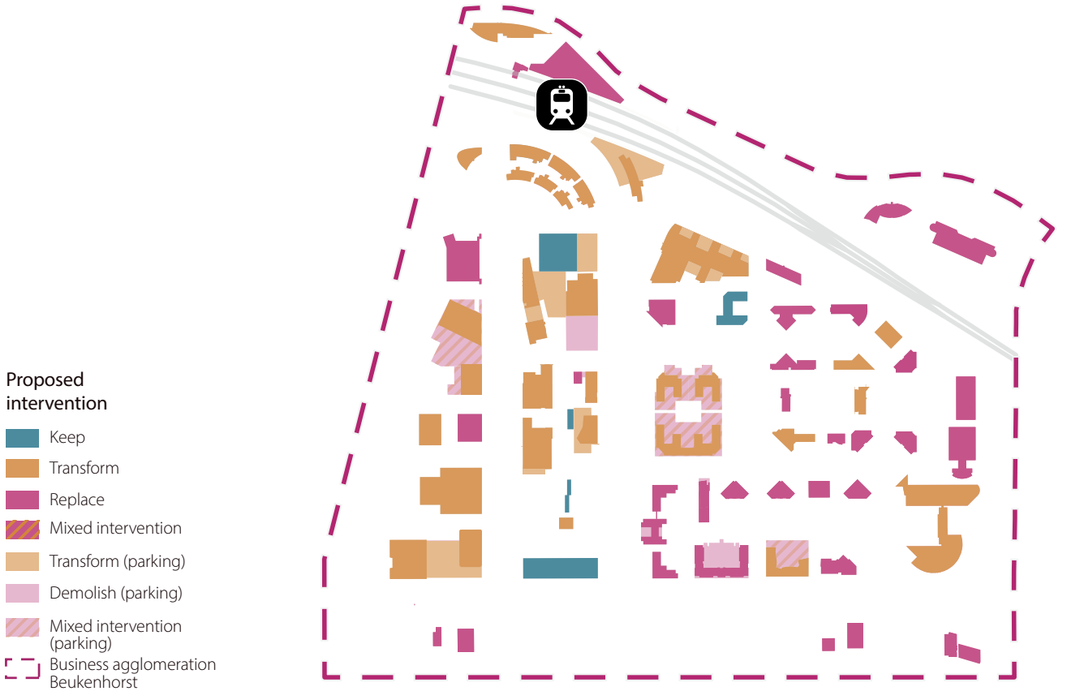


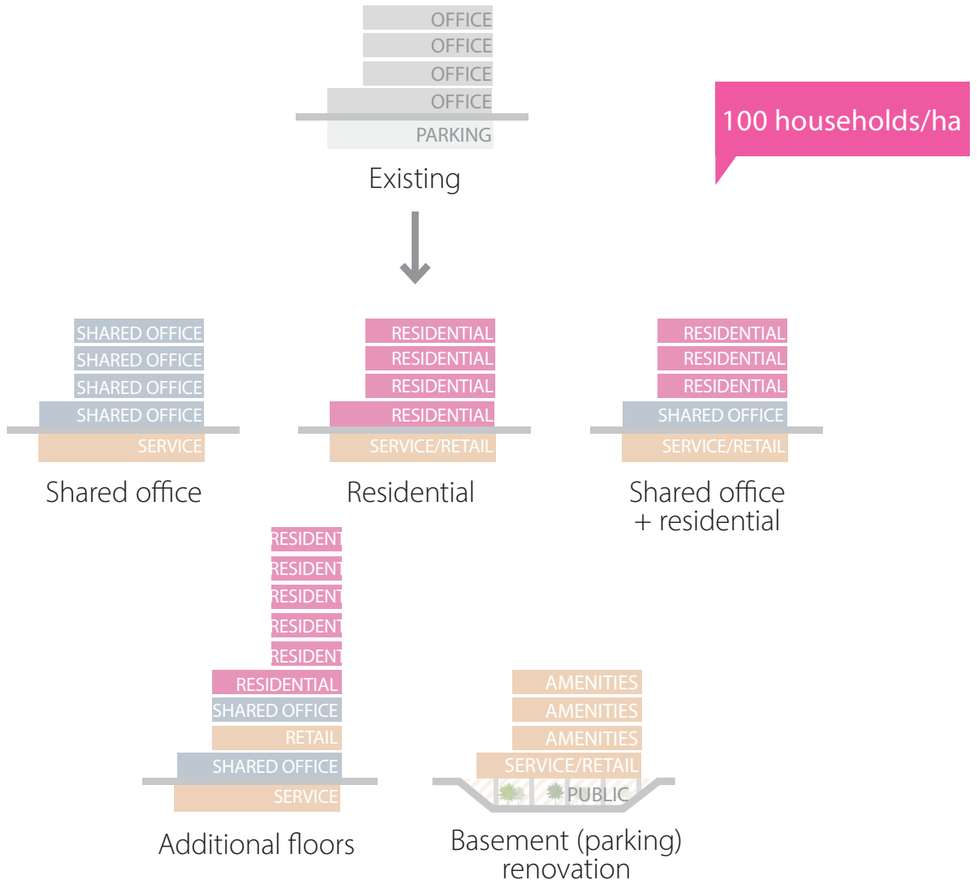
Figure Photos of Beukenhorst, Hoofddorp.
By author.

Figure Photos of Beukenhorst, Hoofddorp.
By author.

Transforming exsiting buildings: based on current conditions / functions



Densification: adding floors & renovating parking spaces



The blocks are occupied by huge separate buildings and divided by parking lots

Figure Photos of Beukenhorst, Hoofddorp.
By author.

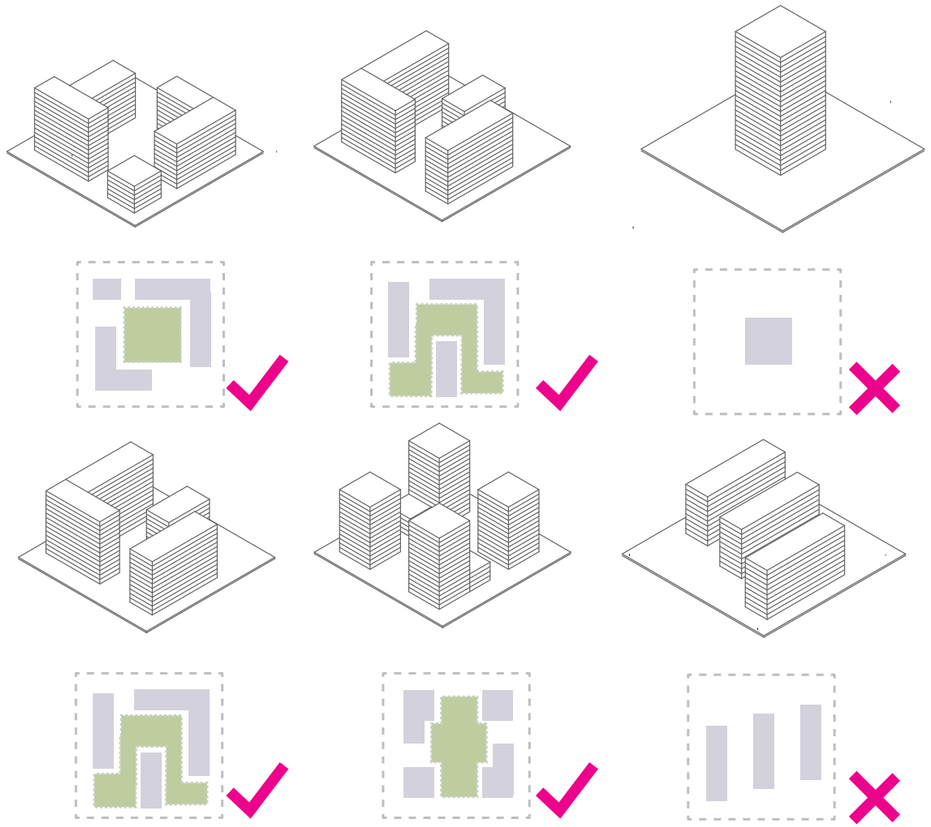
There need to be a new structure for accessible, vibrant green spaces...

Figure Vibrant, green street. *B+B. https://bplusb.nl/nl/werk/rome-reforested/*

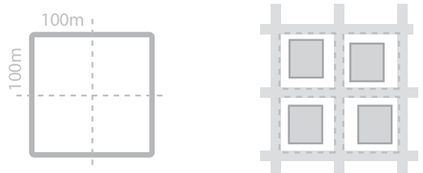
...and flexible public spaces for communities

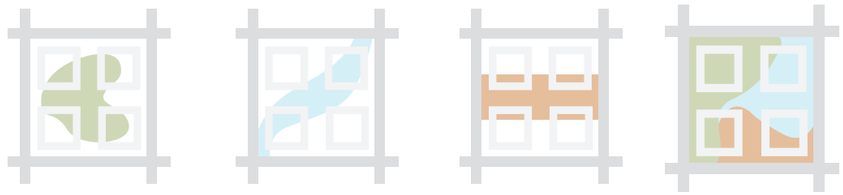
Figure Living in Community. *ArchDaily. https://www.archdaily.com/946464/living-in-community-13-projects-that-promote-shared-spaces*

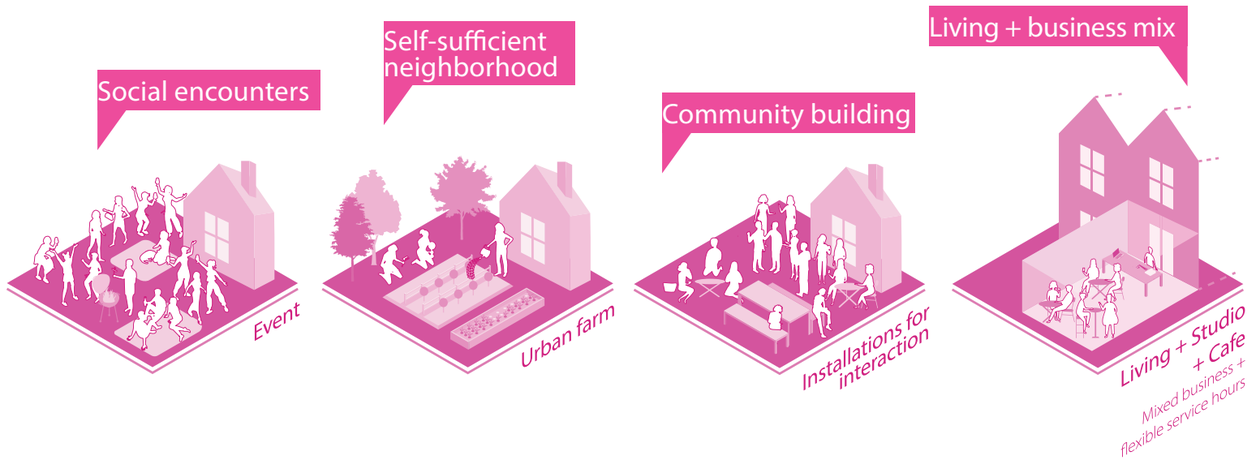
The groups of buildings should form an extent of enclosure

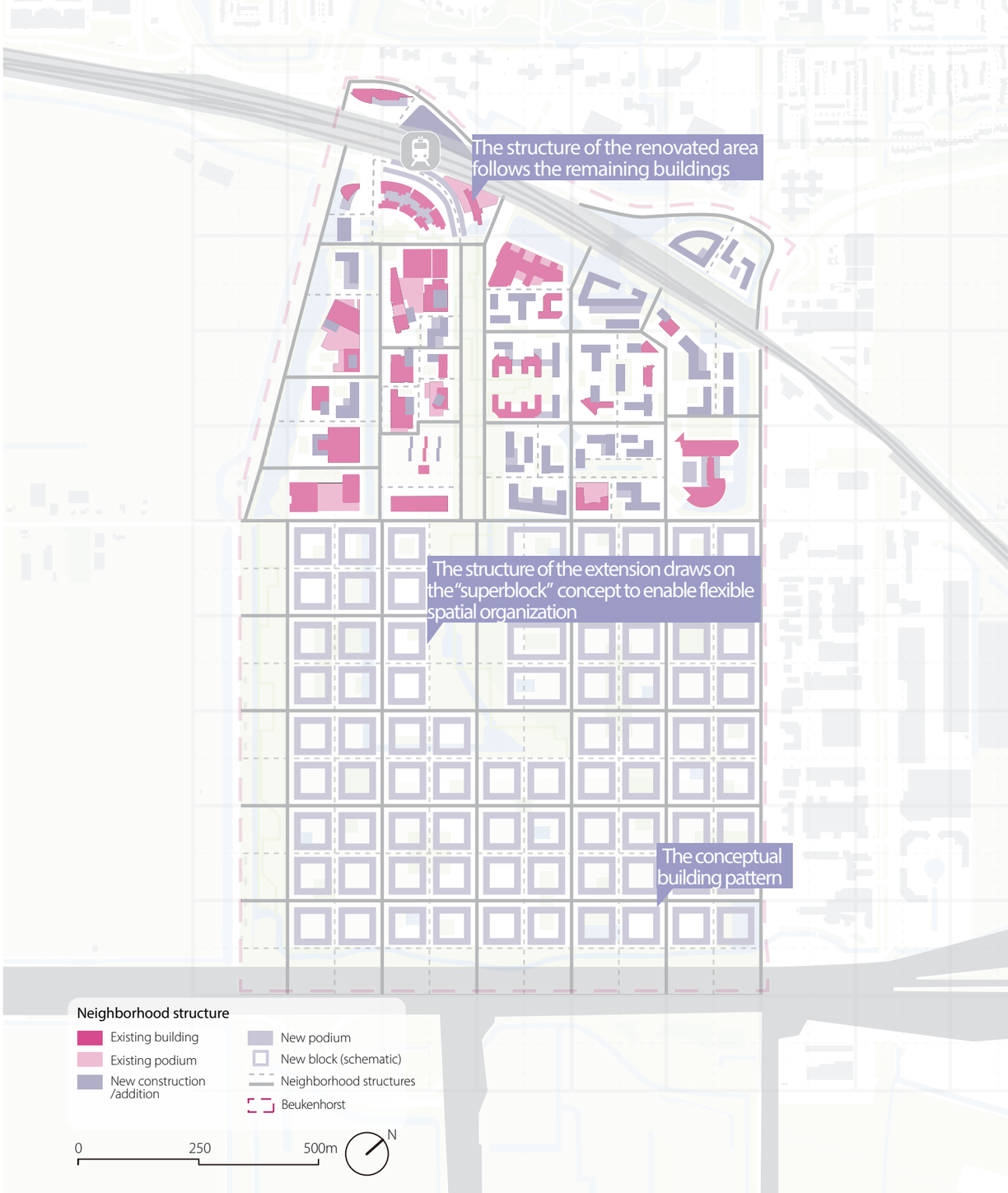


The new structrue: “Superblock” for in-between spaces

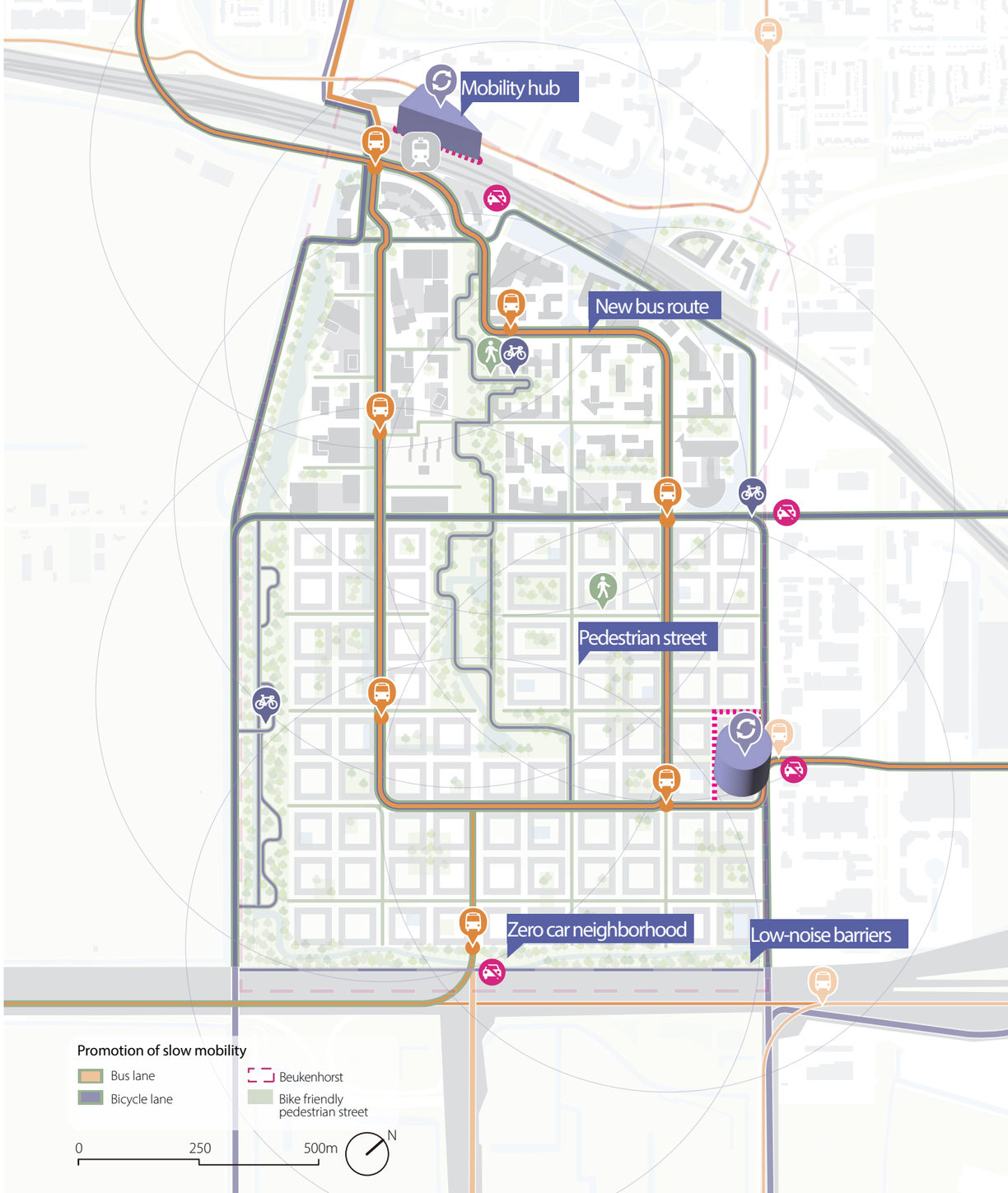








For such a structure, it is a necessity to promote the slow mobility...



...to create vibrant streets

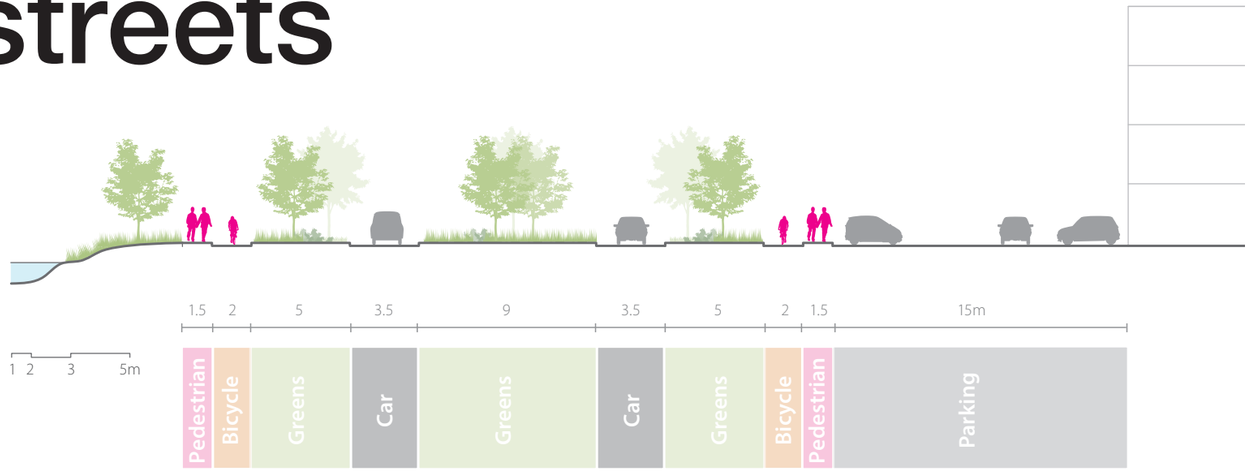


Figure The current **Polarisavenue**. *By author.*

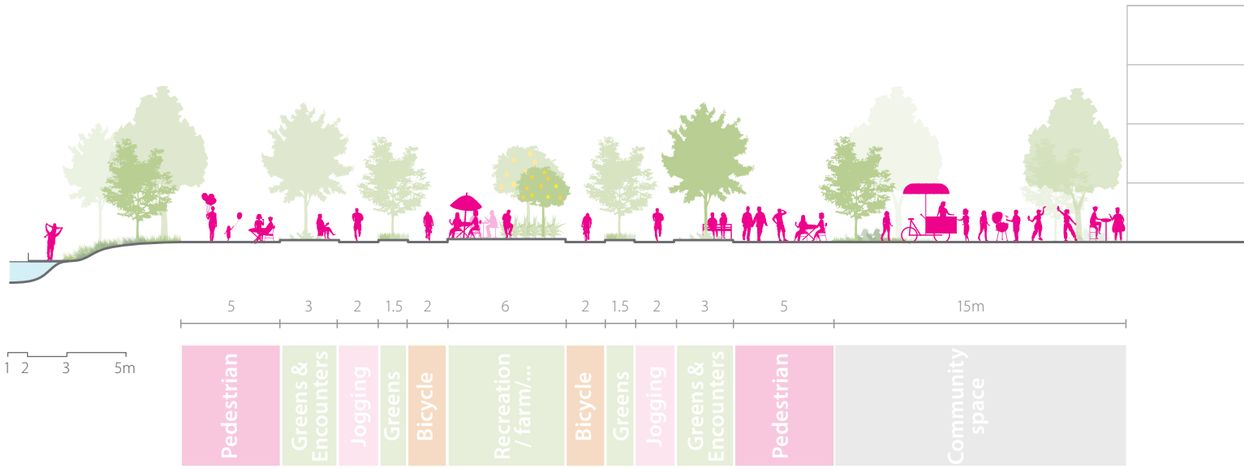
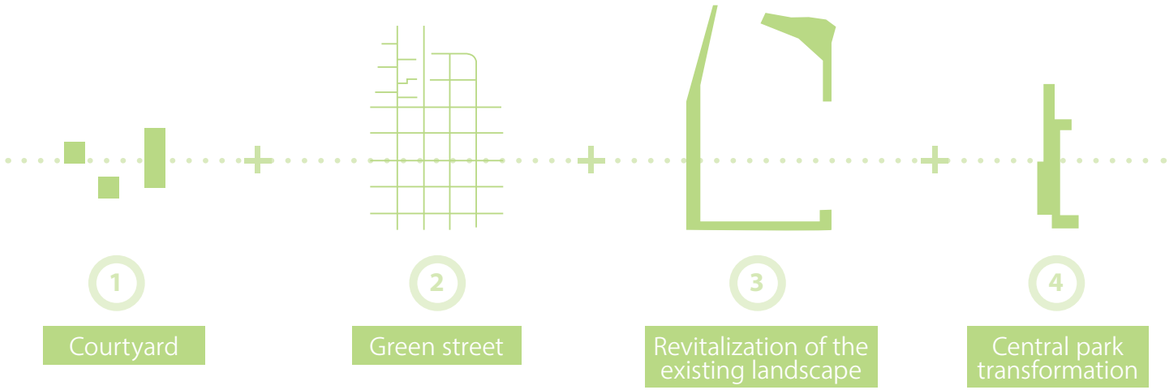


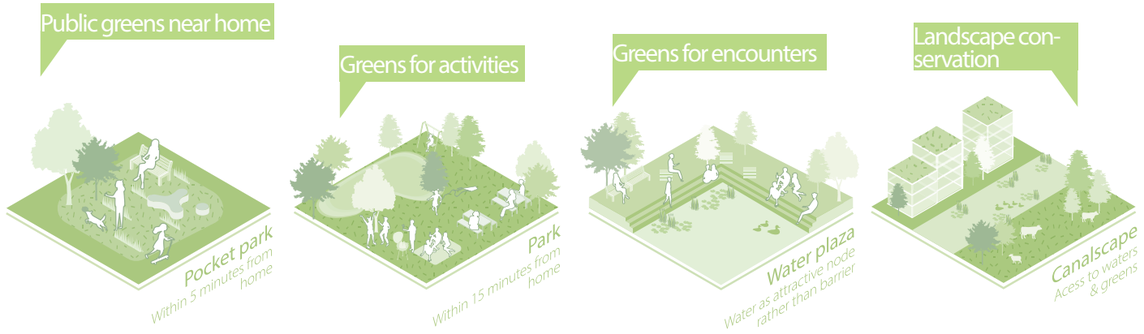
Figure The **Polarisavenue 2073** . *By author.*

Figure Mobility hub and slow-mobility-oriented streets. *PosadMaxwan.*
https://posadmaxwan.nl/en/news/30/community-hubs-for-an-accessible-and-liveable-strandeiland

Figure The street as a vibrant public space. *Mobycon.*
https://mobycon.com/updates/how-to-make-streets-into-great-public-spaces/

The transitions will enable Beukenhorst to develop a system of greens...





...with the new central park

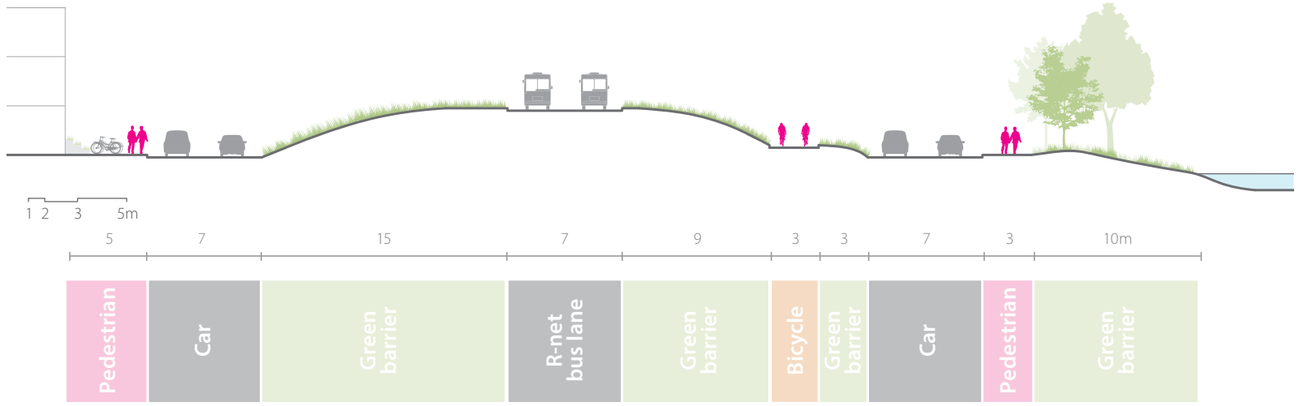


Figure The current **Scorpius-Spicalaan**. *By author.*

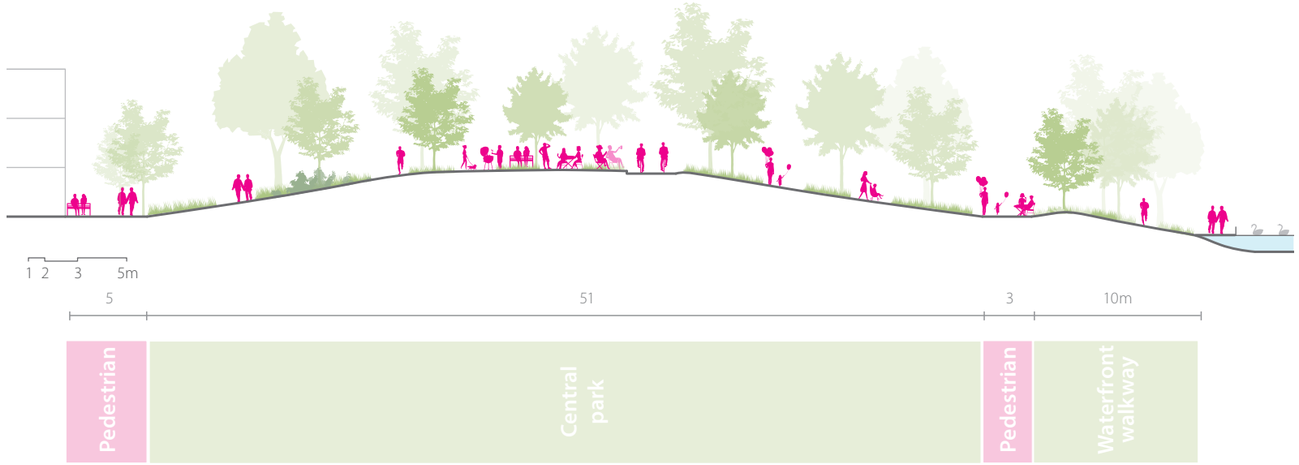


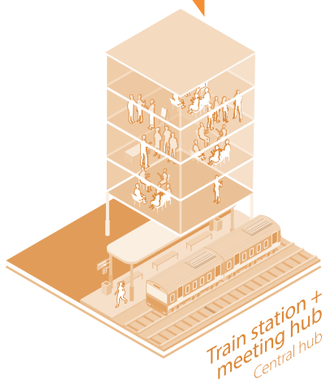
Figure The **Scorpius-Spicalaan 2073**. *By author.*

Figure A park on a slope: Family Park. *Boza Arquitectos / Archdaily.*
https://www.archdaily.com/794810/padre-renato-poblete-river-park-boza-arquitectos?ad-medium=gallery

Figure Waterfront public space. Avon River Park Terraces + City Promenade. *LandLAB / Landezine.*
https://landezine-award.com/avon-river-park-terraces-city-promenade/

And of course, scattered and concentrated shared working spaces are provided...

50%
Central shared office



30%
Neighborhood Shared office

15%
Third places

...together with home -office supplements

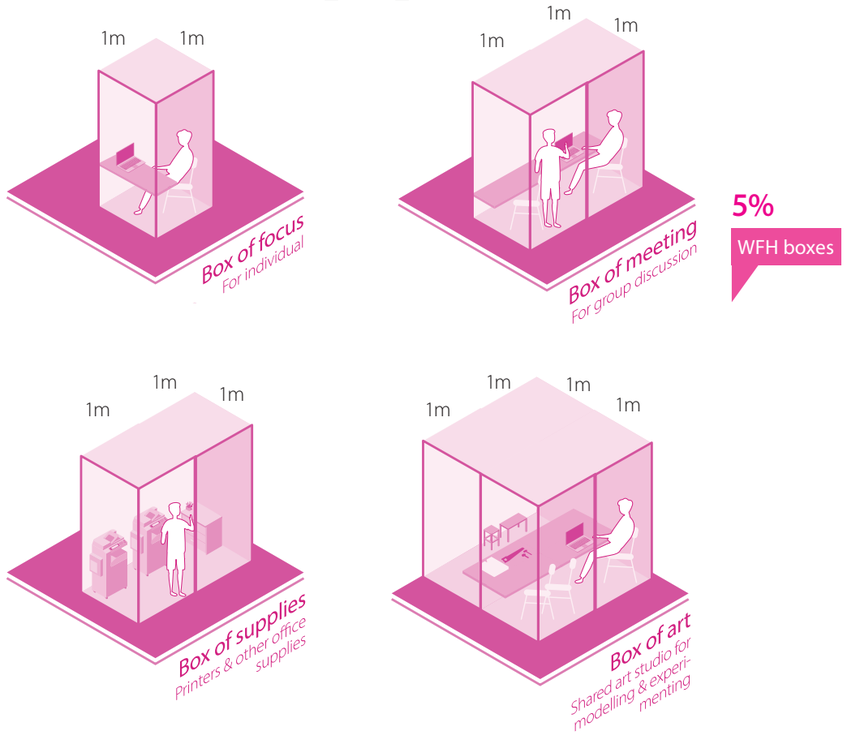


Figure The types of WFH boxes. ***By author.***

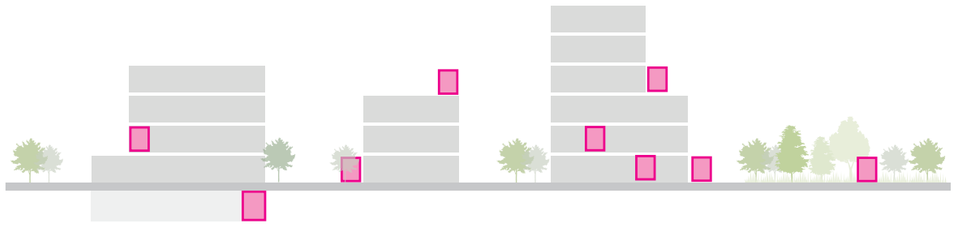
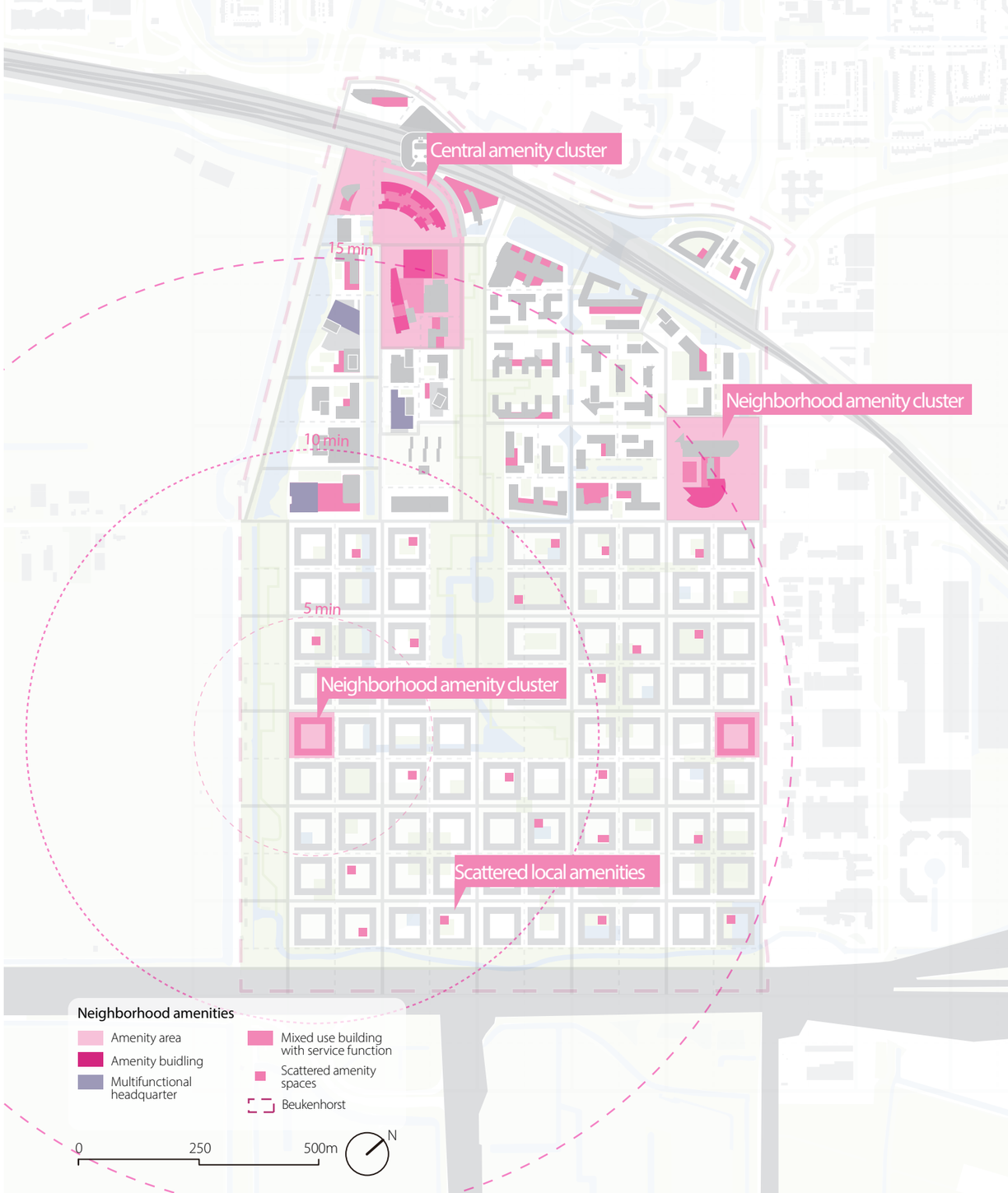


Figure The possible locations for application. *By author.*

Figure Shared office space. ***ThisWork.Space.***
https://thiswork.space/post/why-are-shared-office-spaces-so-popular

Figure Acoustic Office & Meeting Pods. ***Urban Office.***
https://www.urban-office.com/office-pods.html

With the 5-minute scattered local necessities and 15-minute clusters...



Walks to amenities become buffers between work and life

Figure Amenities as part of leisure life. *By author.*

Figure A neighborhood center. *Jones The Planner.*
http://www.jonestheplanner.co.uk/2017/12/is-leeds-really-up-for-jan-gehl.html

Figure Leeds Future Demographics. *12 King Street.*
https://www.12kingstreet.co.uk/leeds-future-demographics/

All of these construct the Beukenhorst 2073

Flexible working locations

Rich amenities & social interactions

Supportive of sustainable, healthy lifestyle

All-day-round inhabited neighborhood

Collaborative community

+

Increased housing affordability

Improved gender equality

With the office trans-formation and mobility transition, it serves as an example for an all-day-round inhabited neighborhood

The promotion of the local economy and public platforms like “time banks“ help to form closer ties among residents

The office transfor-mation can quickly provide affordable housing options to the market.

Hybrid working allows more women to work on their own sched-ules--and Beukenhorst 2073 can do more than that.

Why?

Start → Problem Field → Methodology → Design → Tests → Conclusion

The Randstad

How?

Urban foresight

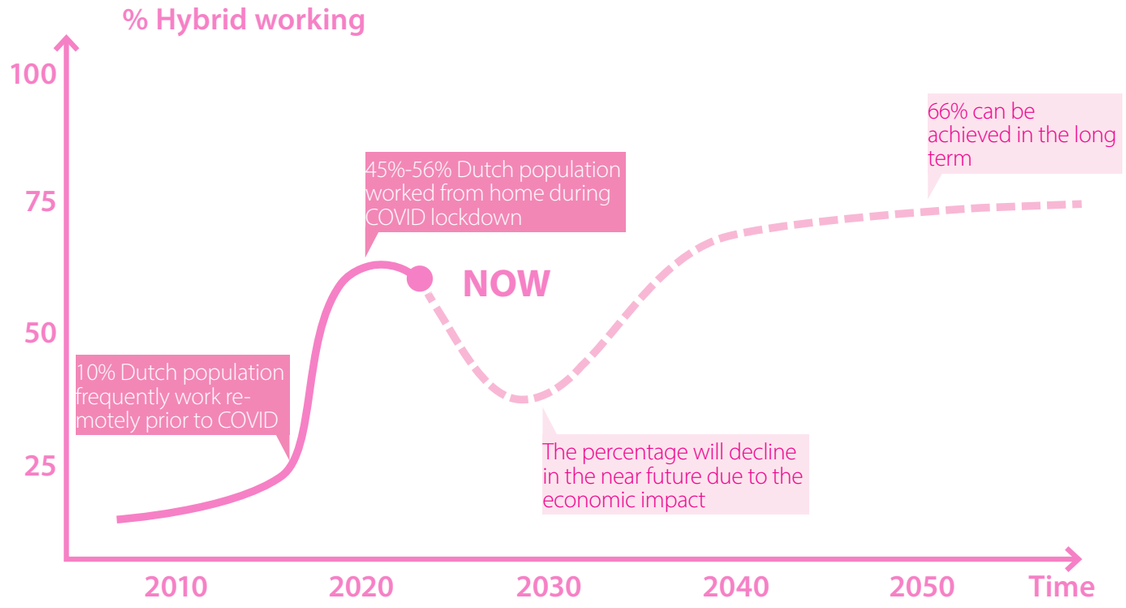
What?

The Vision & Beukenhorst 2073

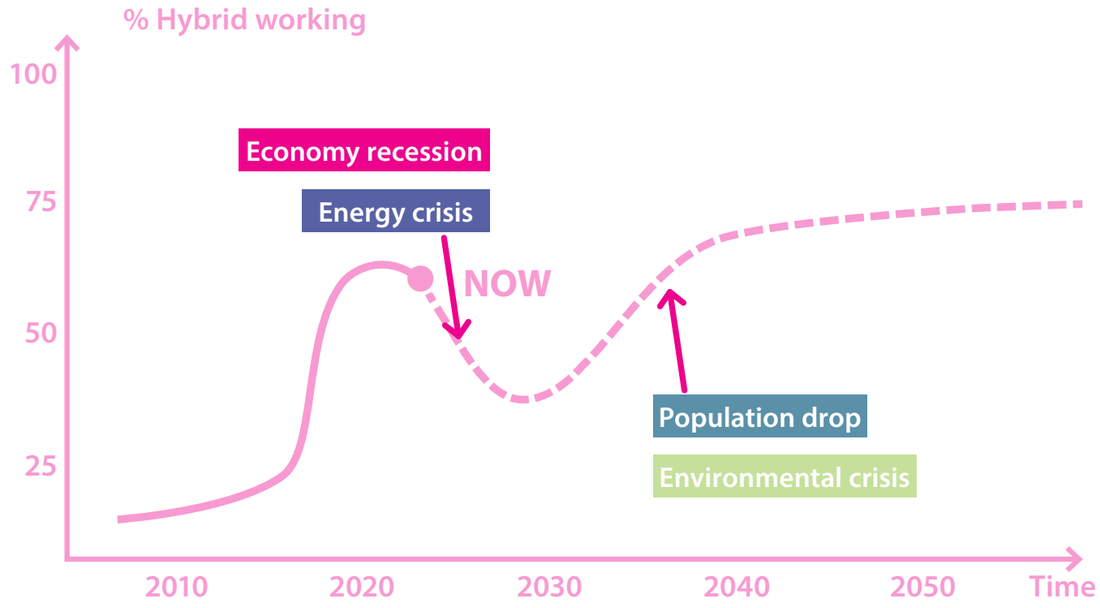
What if?

Testing with scenarios

The current trend of hybrid working is influenced by multiple drivers

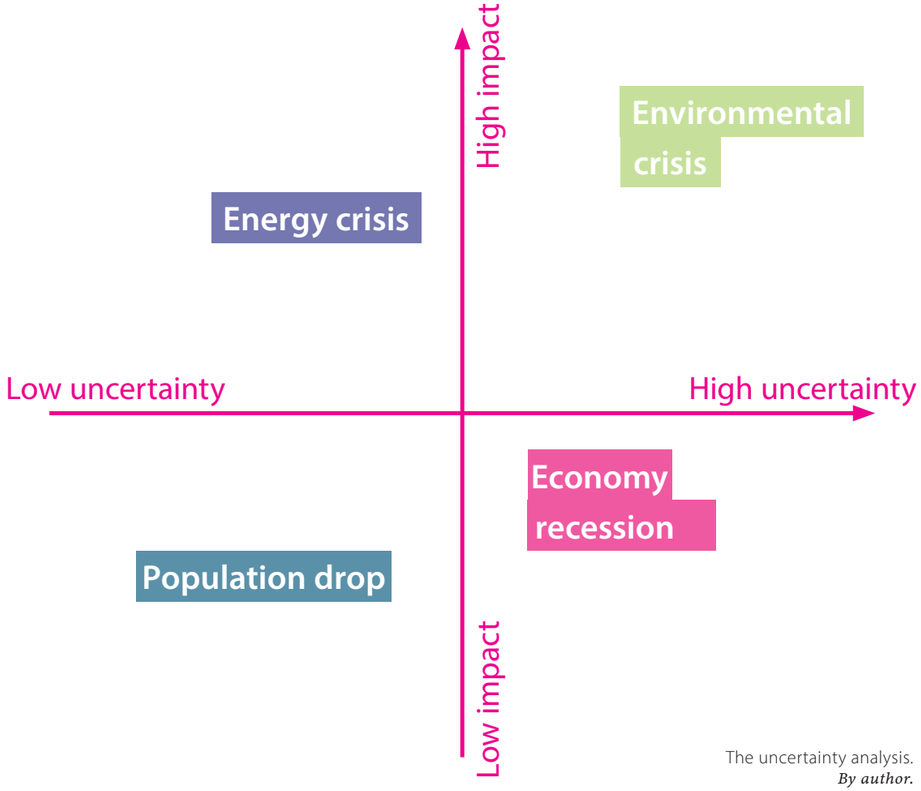


The current and future trend of hybrid work. ***By author.*** Interpreted from (Ton et al., 2022).

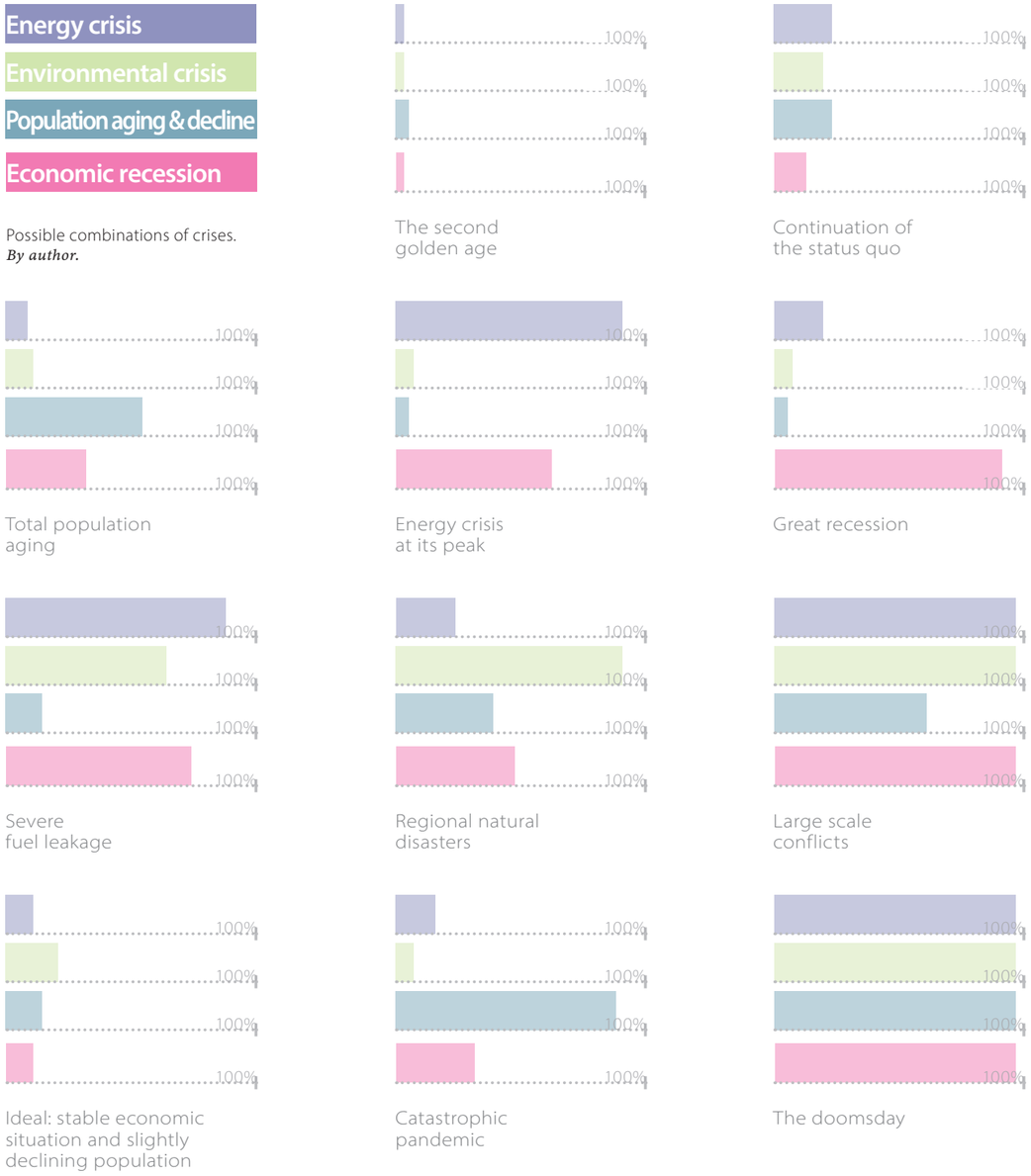


The drivers of change and how they shape the trend. ***By author.***

How do we respond to the uncertain futures?



The uncertainty analysis.
By author.



That is why I developed the scenarios

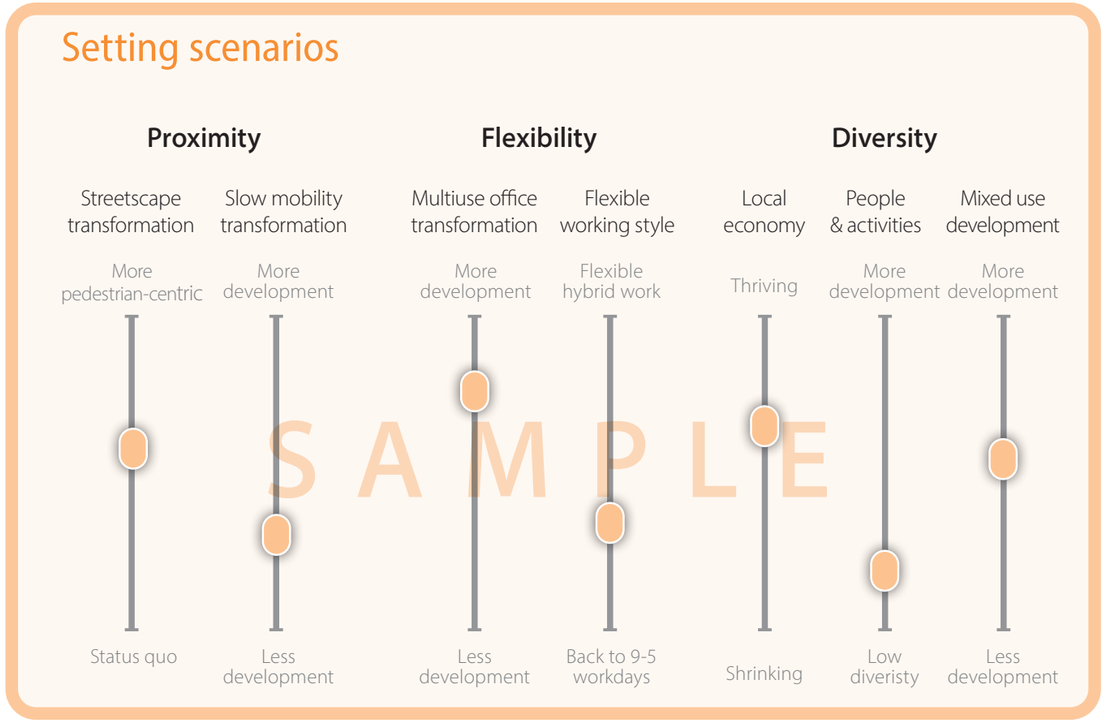


Figure Reference for this project's scenario layout: PBL's report. *(PBL, 2019)*

Live-work City

Ideal scenario
Stable economy & no major crisis

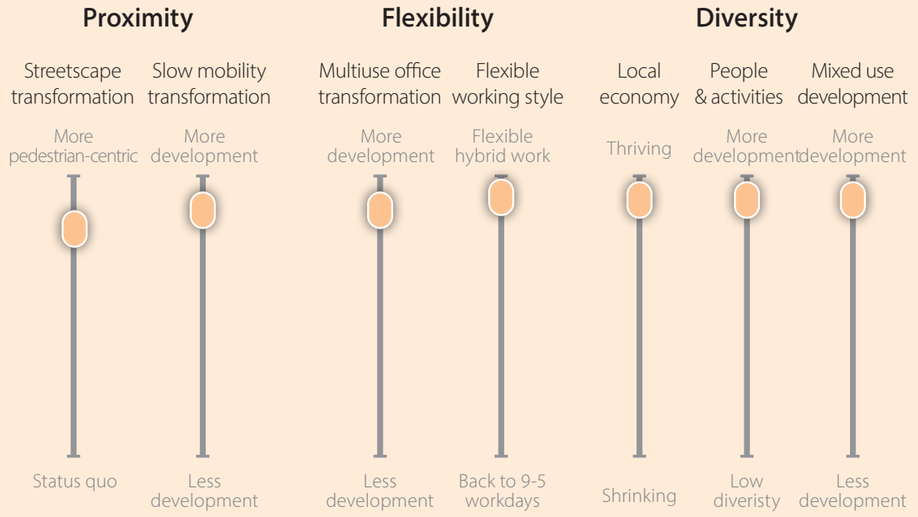
Beuken-horst 2073 is based on the ideal scenario

3XN/GXN Architects & ArchDaily. https://www.archdaily.com/976579/3xn-gxn-architects-gehl-and-conam-envision-a-regenerative-15-minute-community-for-san-diego

In Live-work City...

The **economy** remains **stable**, so that although there is an aging trend, immigrants are filling the population gap. Recognizing the **urgency of the environmental crisis**, people are actively promoting the development of **sustainable cities** and **slow mobility**, but in general, **no major crisis** has occurred. Hybrid work has become the norm, and monofunctional **office areas** have become **green, diverse, and vibrant urban areas**.

Setting scenario Live-work City



(PBL, 2019) is referenced for the layout & illustration .

Frugal City

Scenario
Economic recession

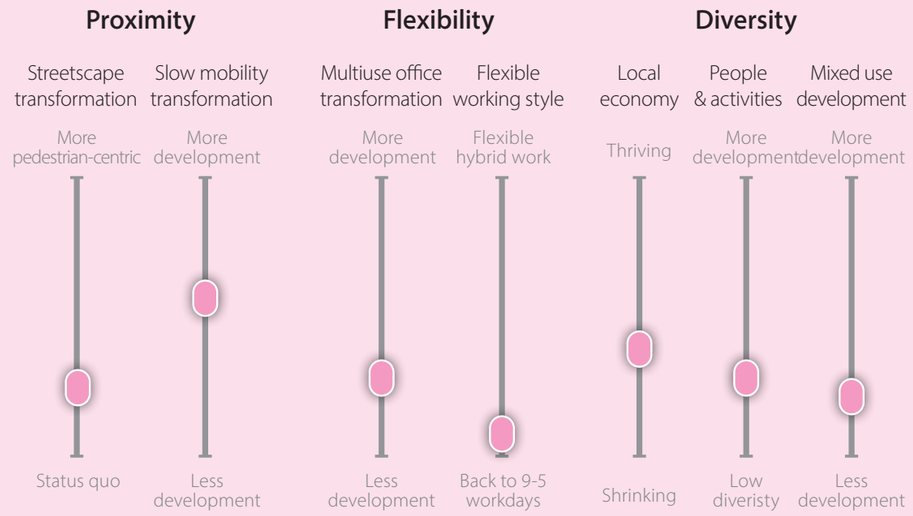
What if there is a prolonged economic recession?

Open Access News. https://www.openaccessgovernment.org/office-workers-sitting-down/71612/

In Frugal City...

The **economy** enters a **downward** spiral, **employment opportunities** and personal wealth for most people are declining, with lifestyle reforms stagnating. The employees lose more and more of their voice in the job market. The freedom of work style brought about by the pandemic gradually disappears and life **returns to the old 9 to 5 routine**.

Setting scenario Frugal City



(PBL, 2019) is referenced for the layout & illustration .

Then...

Focuses

- **Amenities for employees** can be the first step for the mixed-use transformation.
- The development of **public transport infrastructure** can be part of the economic stimulus measures, kickstarting the mobility transition.
- The **housing market** needs to be **regulated** to maintain the diversity of residents.

Economic recession

- Decline of jobs
- Bankruptcies of companies
- Weak investment and consumer motivation
- The wealthy class is less affected, increasing the inequality of the housing market

→

Risks & Challenges

- Transformation of the office district is stopped, although vacant offices are increasing
- The mobility transition lacks funding
- Investors' preference for single-family homes weakens housing affordability

Evergy-saving City

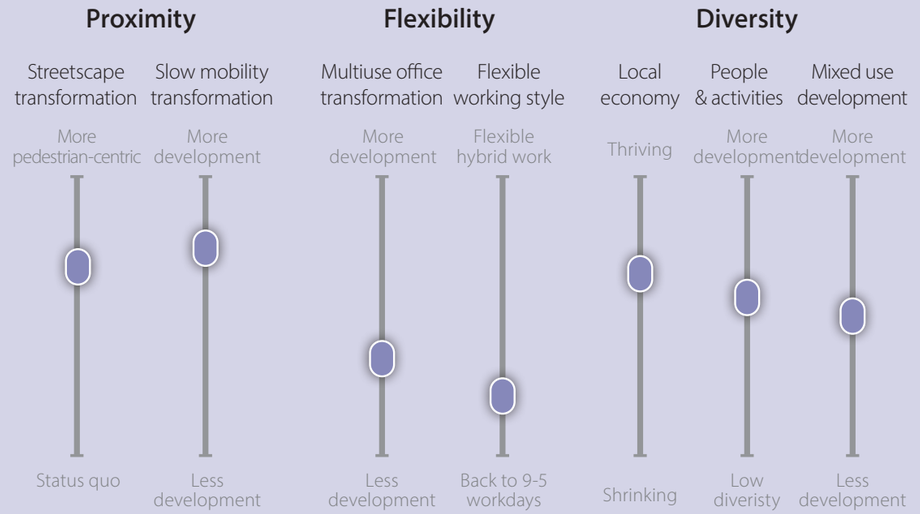
Scenario
Energy crisis

Netzerocities. https://netzerocities.eu/2022/08/02/the-ec-publishes-the-factsheet-saving-energy-for-a-safe-winter/

In Energy-saving City...

Reducing fossil fuel consumption becomes a priority, with **slow mobility** and **public transport** being strongly promoted. People are spending more of their free time in their neighborhood, **bicycle or pedestrian-friendly** living areas. In order to reduce personal and household energy costs, people are **more likely to return to the offices**.

Setting scenario Energy-saving City



(PBL, 2019) is referenced for the layout & illustration .

Then...

Focuses

- The development of **mobility transition** helps to reduce fossil fuel dependence.
- **Energy-efficient renovation** and the inclusion of amenities in office buildings is the first step of office transformation following the mixed-use principle.
- **Experiments** combining **green energy** and agricultural production can take place on the surrounding agricultural land.

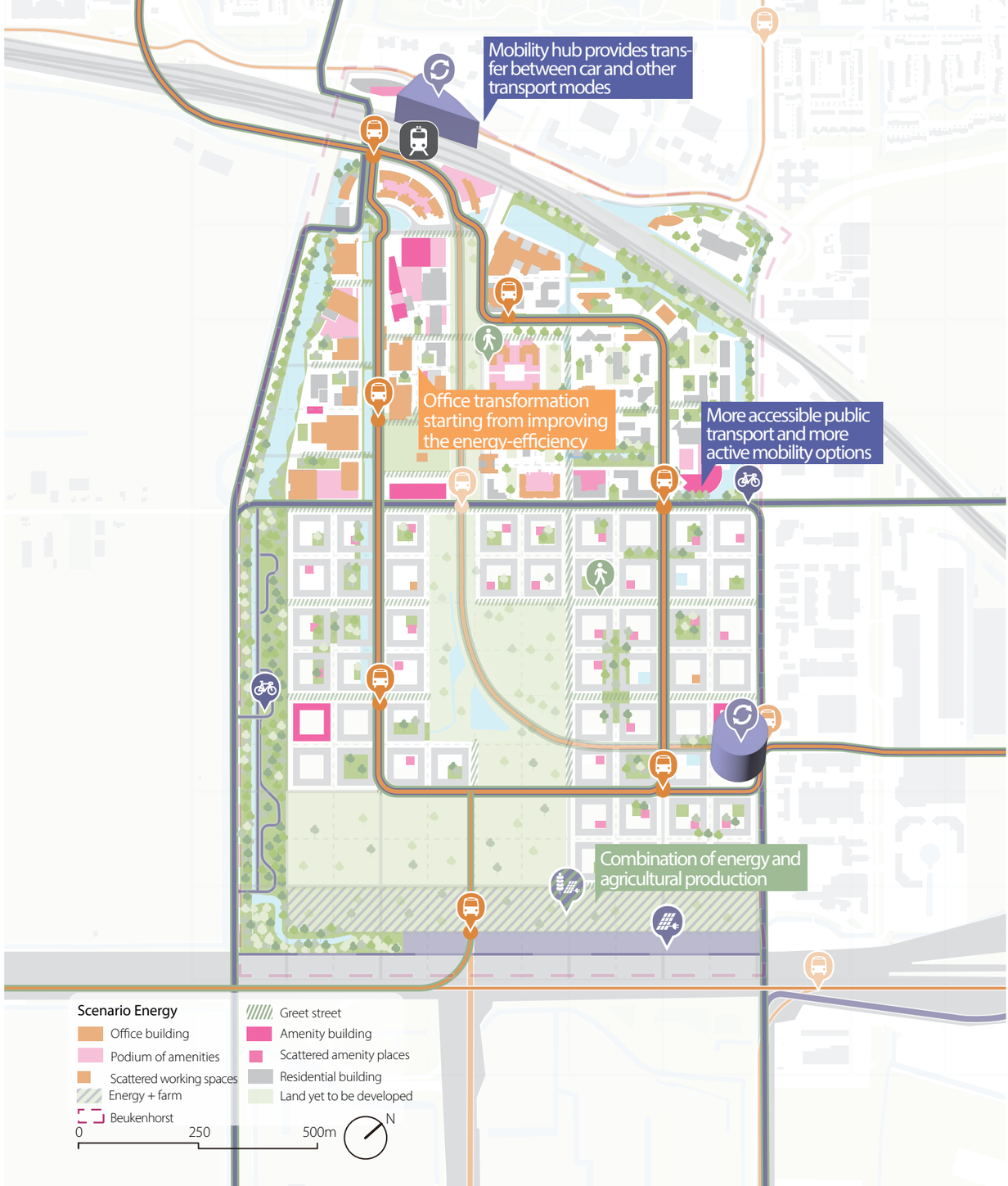
Energy crisis

- Rapidly rising energy prices and energy costs for all industries
- Inflation
- Increased awareness of reducing the use of fossil fuels and the development of new sustainable energy

→

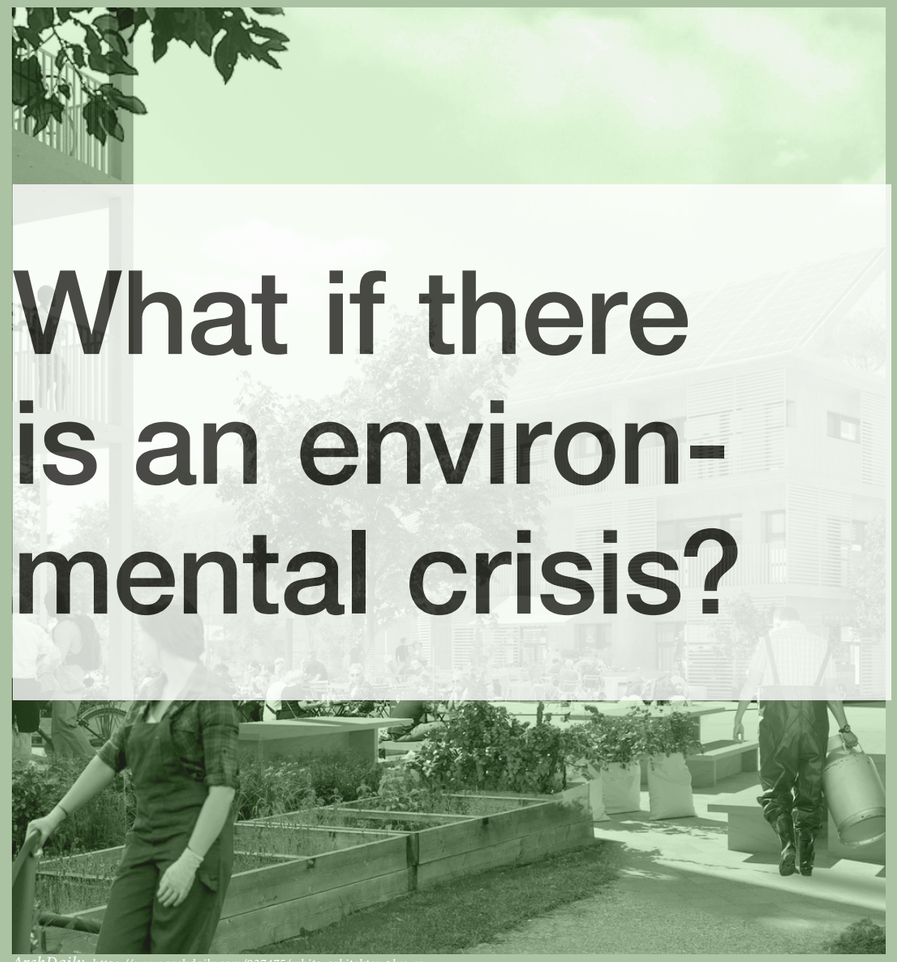
Risks & Challenges

- The trend of hybrid working slows down due to rising energy costs at home
- Rising construction costs stall the progress of office transformation and mixed-use development
- Lower consumer and investor confidence



Eco City

Scenario
Environmental crisis



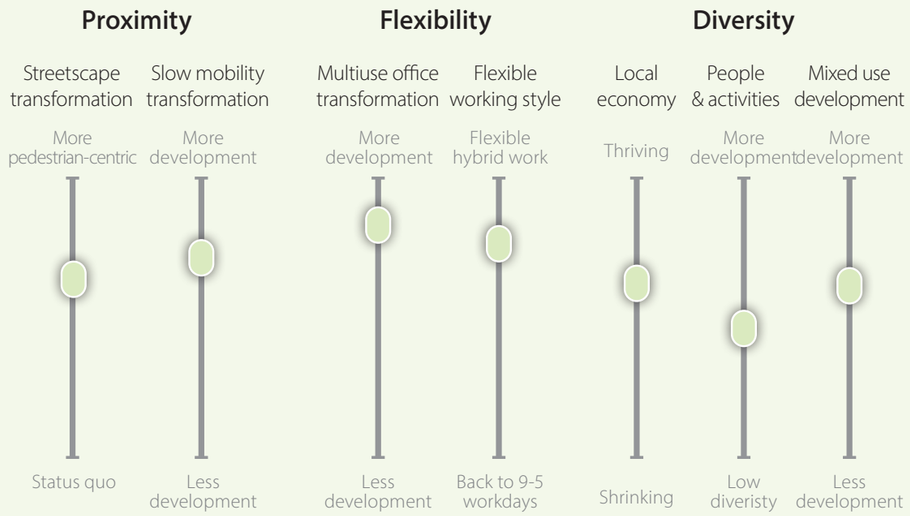
What if there is an environmental crisis?

ArchDaily. https://www.archdaily.com/937475/white-arkitekter-plus-regen-villages-create-first-circular-self-sufficient-communities-for-sweden

In Eco City...

Environmental crisis results in **population decline** and increases the desire to develop flexible and environmentally friendly lifestyles. Hybrid work is largely accepted, and the government is actively promoting the **repurposing of office buildings** and the establishment of **sustainable transportation systems**. However, **economy** is inevitably **impacted**, so as the aspect of diversity.

Setting scenario Eco City



(PBL, 2019) is referenced for the layout & illustration .

Then...

Focuses

- Environmental crisis provides strong motivation for building **self-sufficient communities**
- The emphasis on the natural environment promotes the preservation and **enhancement of the blue-green infrastructures.**
- The concepts of **collaborative community and local economy** gain the importance as part of regional resilience.

Environmental crisis

- Population decline (depending on the extent of the crisis)
- Extreme climate events raise the pressure for decarbonization
- Broad acceptance of hybrid working and emphasis on communities

→

Risks & Challenges

- Declined attractiveness and economic interests of the region
- Over-emphasis on the lifestyle of being local weakens the vitality and diversity of the neighborhoods
- Technical constraints on decarbonization at an industrial scale

Care City

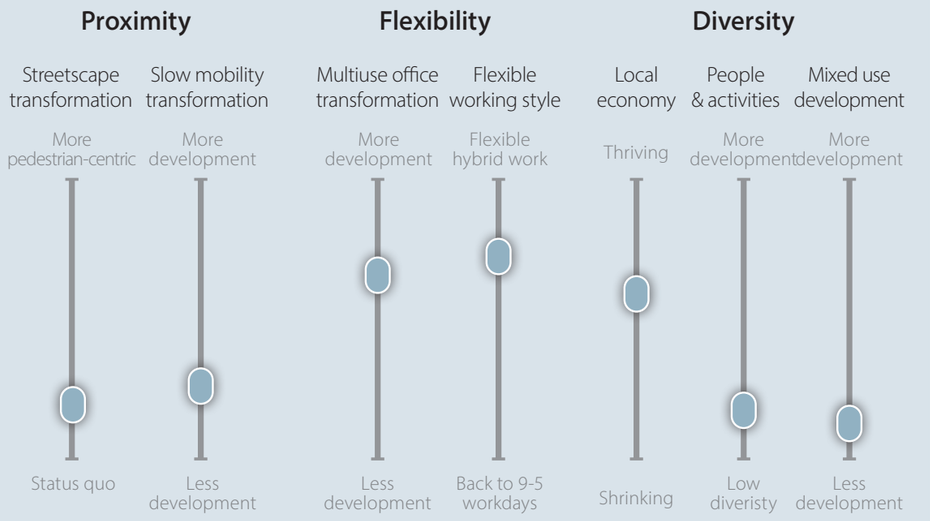
Scenario
Population decline and aging

The Star. *https://www.thestar.com.my/business/business-news/2022/01/29/revitalising-an-ageing-nation*

In Care City...

The aging population has a negative impact on both **economic dynamics** and urban development. With the declining residents and tax revenues, various types of **transformations** are being **slowed or stopped**. However, the difficulty in recruiting gives more voice to the working population and has led to the **spread of hybrid work**. In order to care for each other, **people have become closer** together in the community and the **local economy** flourishes thus.

Setting scenario Care City



(PBL, 2019) is referenced for the layout & illustration .

Then...

Focuses

- The quality of life of the residents can be improved through the **enhancement of the natural and built environment**.
- Close community relations need to be formed through platforms like **“time bank“**, encouraging residents to help each other, and to achieve **bottom-up management**.
- The government needs to **review** the construction projects to make sure that the mixed-use **transformation** and sustainability improvements are taking place.

Population decline & aging

- Decline in economic vitality and tax revenues
- The housing market cools down with fewer consumer needs and investment motives
- The quality of life of each citizen is more emphasized

→

Risks & Challenges

- Decreasing government capacity to provide management and various services
- The importance of density and sustainability gets overlooked as space and resources seem sufficient
- Increasing demand for caregiving services and declining population

Why?

Start → Problem Field → Methodology → Design → Tests → Conclusion

The Randstad

How?

Urban foresight

What?

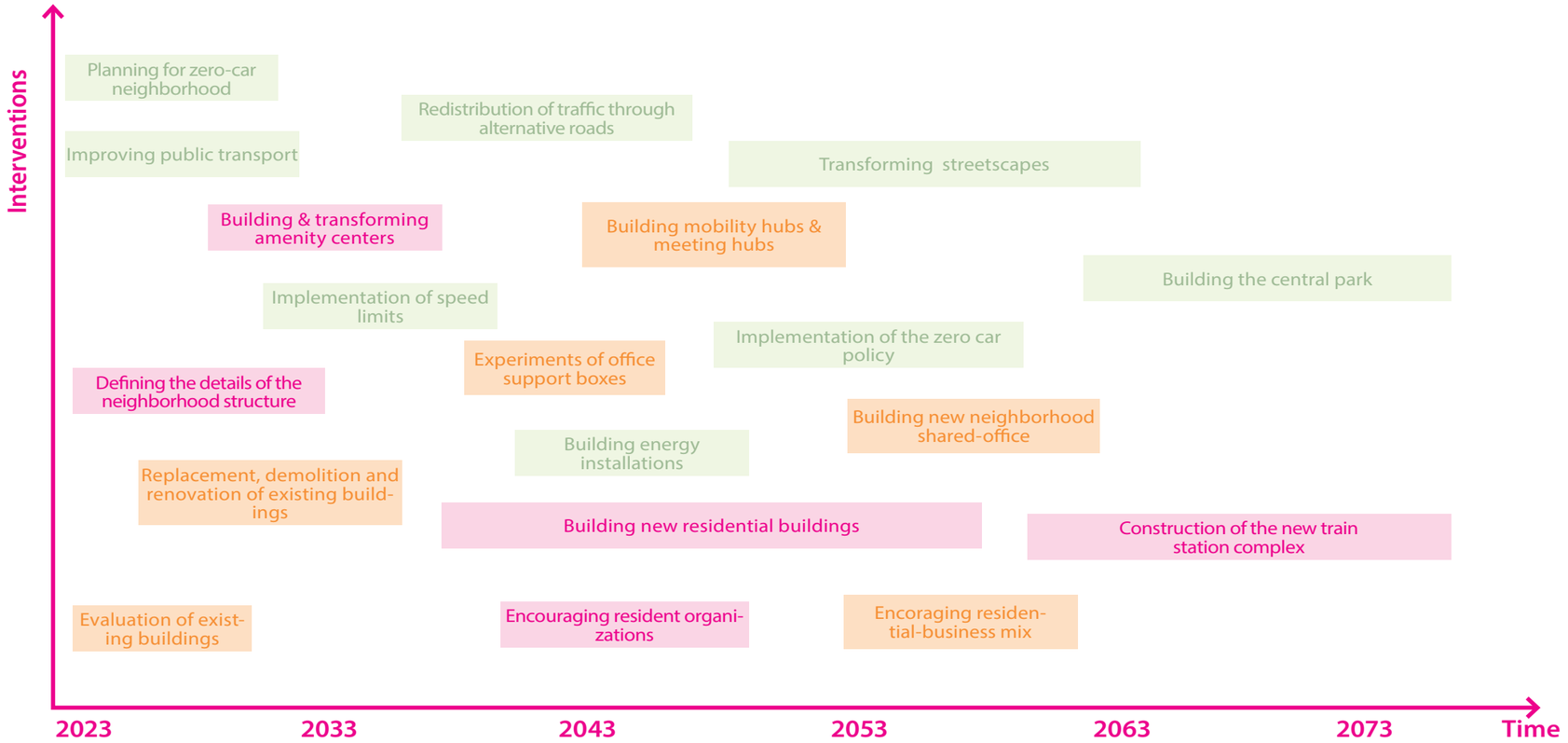
The Vision & Beukenhorst 2073

What if?

Testing with scenarios

Conclusion

The plans and design should always be monitored and adjusted following the external conditions



But we can take actions from now on to make Beukenhorst 2073 happen

Immediate actions

Consultation

with the public and experts about visions and transitions such as mobility/energy transition and street transformation

Proposal

of plans such as blue-green preservation, public transport enhancement and new neighbor-hood structures

Renovation

such as enhancement of green spaces and energy-sufficient buildings

Medium-to long-term actions

Legislation

regarding changes such as allowing other functions on residential land

Community building

engage residents and use events to stimulate communications

Implementation

of transformation plans such as street transformation

Vision 2073

Completion

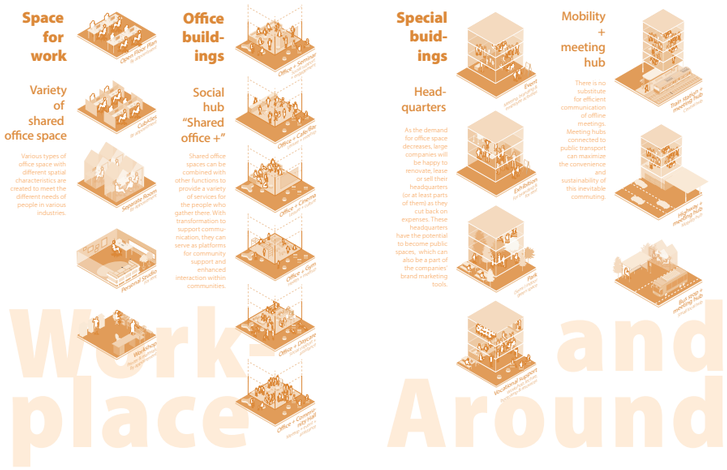
of transition and transformation plans

Monitoring

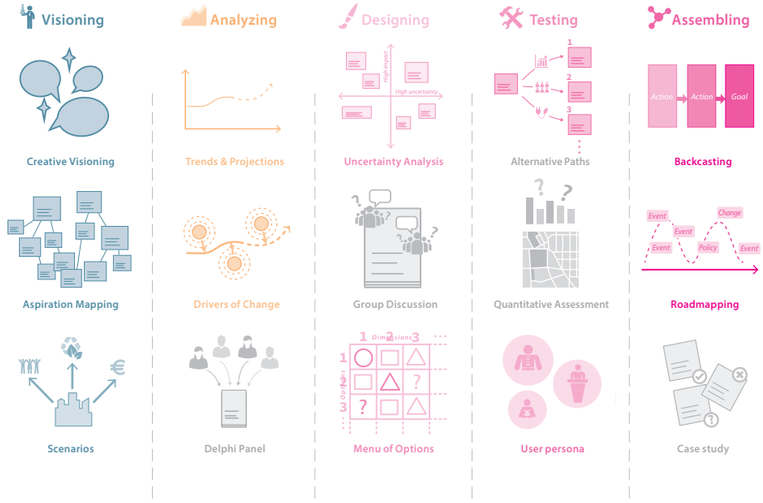
of external conditions, status of completed projects and longer-term plans

The results of this project can be transferred to other future practices

1.Menu of Options



2.Application of foresight techniques



3.Scenarios and points of focus

Thank you

To Rodrigo and Rients who gave me so much advice and encouragement during the year

To the fellow students in the February studio

To my families and friends who calmed me down so many times during the journey

And to the ones listening

TU Delft Delft University of Technology

Urbanism

Complex Cities

P5 Presentation

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2023.1.20