



DE-GROWTH

Vision for city of Rotterdam beyond pursuit of growth

AND

Design as Politics 2016/2017 - Graduation thesis

THE CITY

4509463

12|01|2017 TU Delft

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COLOPHON

Thesis De-growth and the city
What is left is more than enough
12|01|2017

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SUMMARY

RELEVANCE Overall, In my thesis I tried to examine in depth indications of the De-growth theory for urban planning and to draw spatial implications from that. The chosen case study is the city of Rotterdam, known for its growing harbour and top-down and growth based paradigm of urban development. The goal is to link economic and environmentally oriented theory with urban planning via researching possible transformation solutions and optimizing them according to concrete locations. **The objective is to open up conceptual space for imagining and enacting diverse alternative futures that share the aims of down-scaling affluent economies and their material flows in a just and equitable manner.**

PURPOSE The project is illustrating the benefits of Degrowth* principles in a given location.

Research question:

What are the spatial implications of applying the De-growth principles in urban planning of the city of Rotterdam?

Sub-questions:

q1 How the imperative of growth shapes the city of Rotterdam?

q2 What are the spatial implications of Degrowth theory?

q3 How does new non-growth oriented economy influence space in example of everyday practices of collaborative housing/working?

The conducted research leads to proposal that works as a planning guide for the De-growth future in post-capitalist society addressing two groups of potential users. (1) Urban planners should find a new visual language and guidelines for getting familiar with the concept of De-growth and (2) small scale practitioners of collaborative and convivial refrain should be able to use it to empower their own ideas and understand importance of networking and thinking in bigger scales.

METHOD **This is done by** looking into existing collaborative living practices that combine living and working, their principles, concepts and spaces. Collaborative living practices are chosen because of their experiments in new economies and spatial production that present a good ground for imagining the aims of the De-growth theory applied in the city. Useful examples are combined with literature study of the De-growth to make analogies for larger scales of district, city and region.

Chosen location is city of Rotterdam for its history and presence in the growth oriented economy of Europe and the world and for its rich history and presence of small scale experiments in living/working/self-organizing.

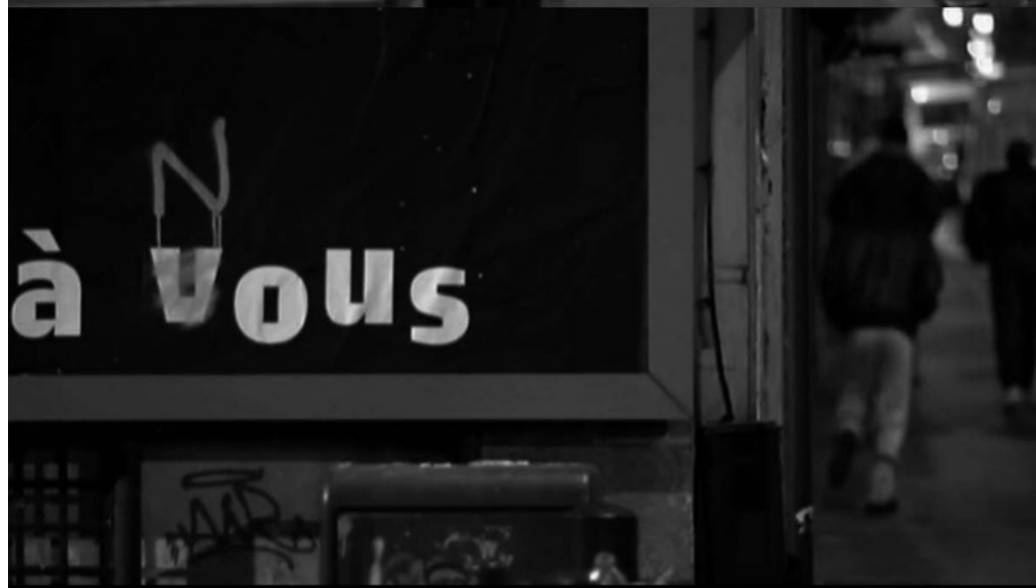
The proposal derives from the conceptual strategy on regional scale based on set of 5 spatial inputs for De-growth. This step makes project transferable to other urban contexts.

OUTCOME **The outcome of the project** has been set through two challenges:

(D6) What kind of city scape would be created through De-growth transition?

(D5) How would transition towards the De-degrowth city take place?

The design is utilized as a tool to visualize the physical transformation between in different parts of urban fabric. The product therefore has two parts: design proposal in scale 1:1000 showing all important physical features of ideal urban transformation developed in De-growth scenario and set of conclusive material that draws mostly non-physical implications of this approach ie. governance method, transitioncourse, phases etc.



"Anyone who believes in indefinite growth in anything physical, on a physically finite planet, is either mad or an economist."

– Kenneth E. Boulding

*Degrowth is the intentional redirection of economies away from the perpetual pursuit of growth.

For economies beyond the limits of their ecosystems, this includes a planned and controlled contraction to get back in line with planetary boundaries, with the eventual creation of a steady-state economic system that is in balance with Earth's limits. (degrowth.eu, 2010)

source: image is taken from movie
La Haine, 1995, by M. Kassovitz

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1. Introduction - Design as politics

On the very beginning I wish to sketch my motivation to merge design with politics that take the form of a graduation studio. Having finished my Master of Architecture and Urbanism at the University of Zagreb and after a period of working in practice I entered the Master of Science in Urbanism at TU Delft. For this second master degree I want to deeper explore the relationship of societal, political and cultural processes that shape contemporary (European) cities.

Call out for a graduation studio sets the following question as central to me:

How can we design buildings, cities and landscapes that make the best of our restless lives?

My first reaction is another question: what makes our lives restless? Besides a rather Marxist reasoning of struggle over means of production and recognition I would want to go further and say that it is also fragmentation of our options to practice and live our lifestyles and identities and organize into preferred living groups. I would say that contemporary city consists of fragmented spaces of mutually shared identities. In the Urban Revolution (2003) Henri Lefebvre for example writes that we see the simultaneous moment of homogenization (e.g. up-scale glass and steel architecture) and fragmentation (i.e. tearing the organic social mix apart) that a) makes capitalist cities look more of the same, while

b) separating/segregating the use of space with centre/ periphery.

What is happening is conflict over ever changing image of the city. Imposing image of competitive global metropolis over one's right to settle in self-created surrounding is globally present process that shapes not only urban matrices and skylines but everyday life and politics and collective struggles. My deepest curiosity is not just to understand this conflicting processes but to offer an radically different view on how the cities can be shaped based on forces of mutual aid instead of competition.

1.1. Individuality vs. Collectivity

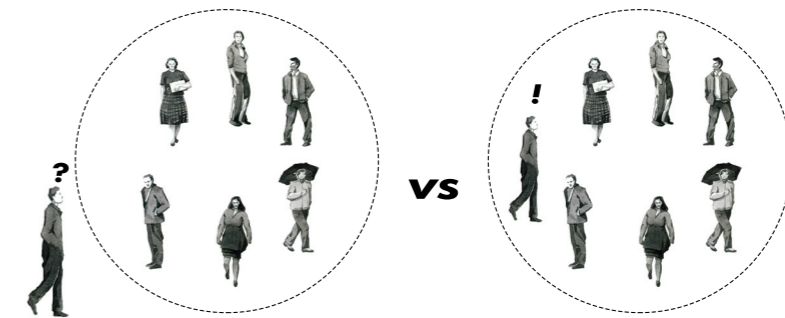
One of the initial cultural differences I faced when moving to Netherlands is the strongly present individualism that is part of local culture. Individualism is truly a value for many people in Netherlands that keep their personal life for them selves and respect each other's privacy. To a person that grew up in an extended Mediterranean family where 12 of us of three generations lived together in one house this was a trigger for some questions on a gap that seems to occur between individuality and collectivity. What are the actual benefits of living in large groups? Where is the exact boundary that shouldn't be crossed in respecting other persons privacy? What are the reflections of these two opposite lifestyles on society as whole? [fig.1.]

After I moved out of my family house I lived in number of intended communities, squats and living groups. This means that for ma-

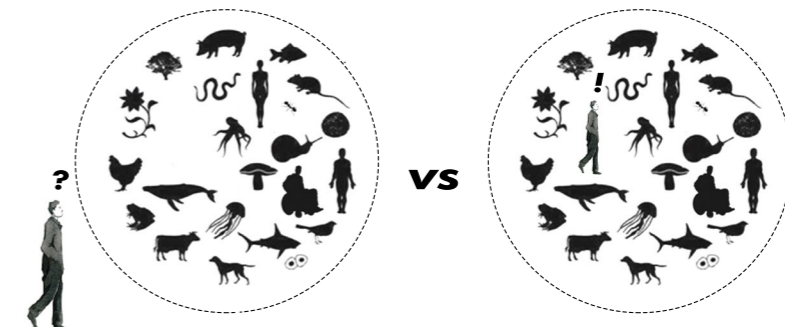
for part of my life I lived in spaces where at least 5 of us were dwelling. Through the lenses of collectivity my perception of urban life, living qualities, social values etc. is shaped. The graduation project tries to add an useful argument for recognizing the qualities of life in self-aware groups and importance of utilizing the professional knowledges to make this practices more common and widely acceptable

1.2. Modernity vs Ecology

Other concern that this project is shaped by is urgency to rethink our cities and society as part of ecological system of the planet Earth. The origin of the word culture comes from French, which in turn derives from Latin 'colere'. This verb in Latin means to tend to the earth and grow, or to nurture. Today this verb developed a new meaning. The verb to cultivate '[...]shares its etymology with a number of other words related to actively fostering growth' (De Rossi, 2015). In human activity of 'cultivating' the nature for his/her own benefit there is an inherited conflict between competition and collaboration with the nature. [fig.2.] This conflict is present in recent discussions about the future of the cities. From the 'smart city' concept to the neo-primitivist and neo-malthusian call outs for abandoning the cities there is a number of different standpoints about role of the growing urban areas for balancing the ecological footprint and hindering pollution.

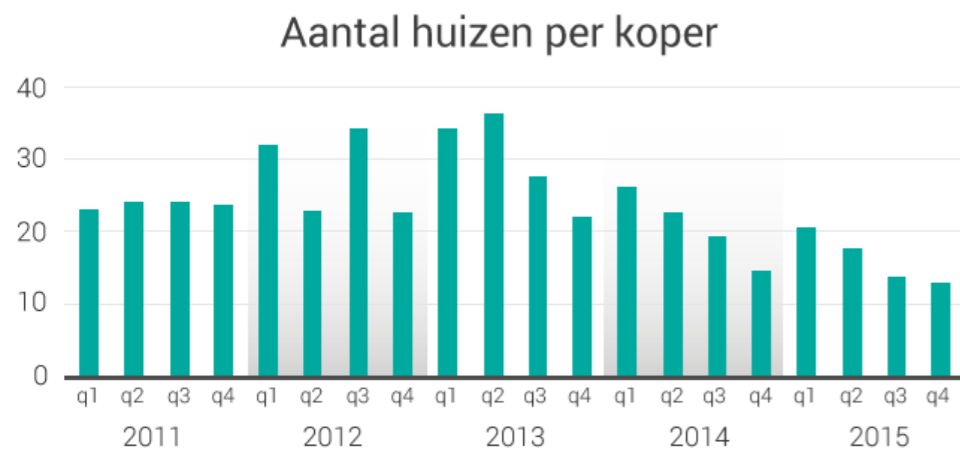


[fig.1.] Individuality vs collectivity

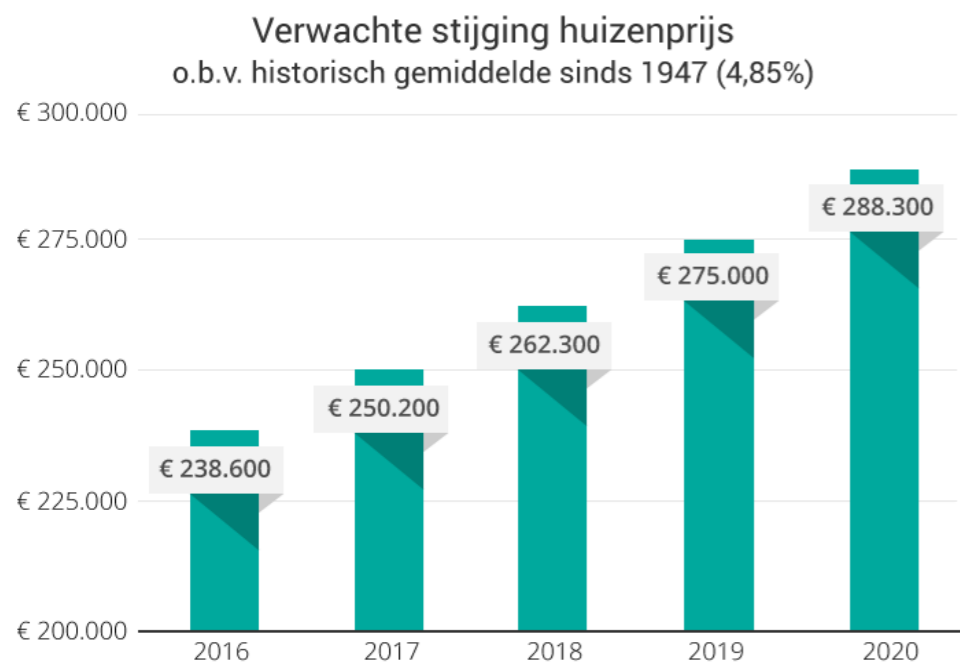


[fig.2.] Modernity vs ecology
source:author

[fig.3.]Case of rotterdam, 2016



Number of houses on the market per buyer



Price of real estate
source: Wegwijs.nl, 2016

1.3.Challenges of restless life in the city - from housing perspective¹

This paragraph describes the observation of housing distribution related issues that triggered the research about city developed through imperative of economic growth and investment market.

Being the tenant in European cities means being on the market for a while already. If we take a look at the examples of advertisements for student housing in Rotterdam on Facebook pages, Cribber, Kamernet and other online platforms we can notice that they look a lot like each other. Future tenants are offering themselves a perfect inmates, presenting their skills, habits and character. They speak few languages, they are social but respectful, spontaneous but tidy, like to relax but hard working, and sometimes even they are never at home! These contrasts are there to fulfil every expectation of landlord or house-mate that wishes to rent or share home. Reason for these generic self-presentations is commercialization of tenancy. Instead of trying to find a place to live based on his/her affinities and interests, the tenant today offers him/herself as a product that has to sell itself on the market.

Housing in 20th century was built, distributed and regulated through public or private domain. Depending on different historical periods, ideologies, geographical conditions the ratio of the two was different, however, property-led urbanization was in the very root of most of the housing models.

urbanization was in the very root of most of the housing models. Recently these models are not able to give an answer to rising urban questions such as: ageing population, affordability and accessibility of housing options, changing of living and market patterns, environmental crisis etc. Housing is facing a big gap between being on one hand largely commercialized as property-led real estate market on the other hand one of the basic needs of every person. (Housing) crisis back in 2008. revealed alienation between material (property based) and immaterial (place and identity based) aspects of housing. Around 330 millions of households worldwide are struggling to find a decent or affordable housing and additional 3% of world's population does not have permanent address (Madden , Marcuse, 2016). This happens because the field of options for average buyer became smaller while the prices for these options became higher, in both private and public housing sector. [fig.3.]

Still, LeFebvre defines the city dweller as a new political subject substituting Engels' proletarian worker (Lefebvre, 1990). If we merge contemporary city dweller and his 'options' to settle with Guy Standing's precarious generation (2011) that shares same lack of opportunities we get a new European youth described. Whole generation of young people, ranging from creative class and artists to seasonal workers is moving around Europe in search of better life and recognition. Inflexibility of cities to create

this generation forces this generation to act on the market resulting in restless, unpredictable and stressful life. For this reason the fundamental concepts of economical and social development that result with the described issues of spatial production have to be challenged. By looking into the created gap between exchange and use value of housing attention is brought to the main argument for these investments- the imperative of economic growth. Following paragraph will explain the core limitations of this imperative.

¹ Although project doesn't work on problem of housing directly, this observation was the trigger for thinking about current development of the city and importance of the economy for it. For this reason I find necessary to write it down.

RELEVANCE:URGENCY











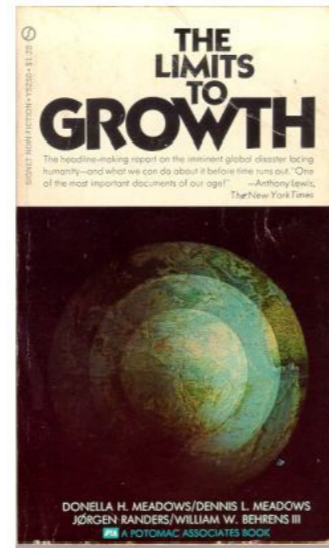


[fig.4] Our planet is a finite system and as such can not provide us with endless resources. Options that we have:

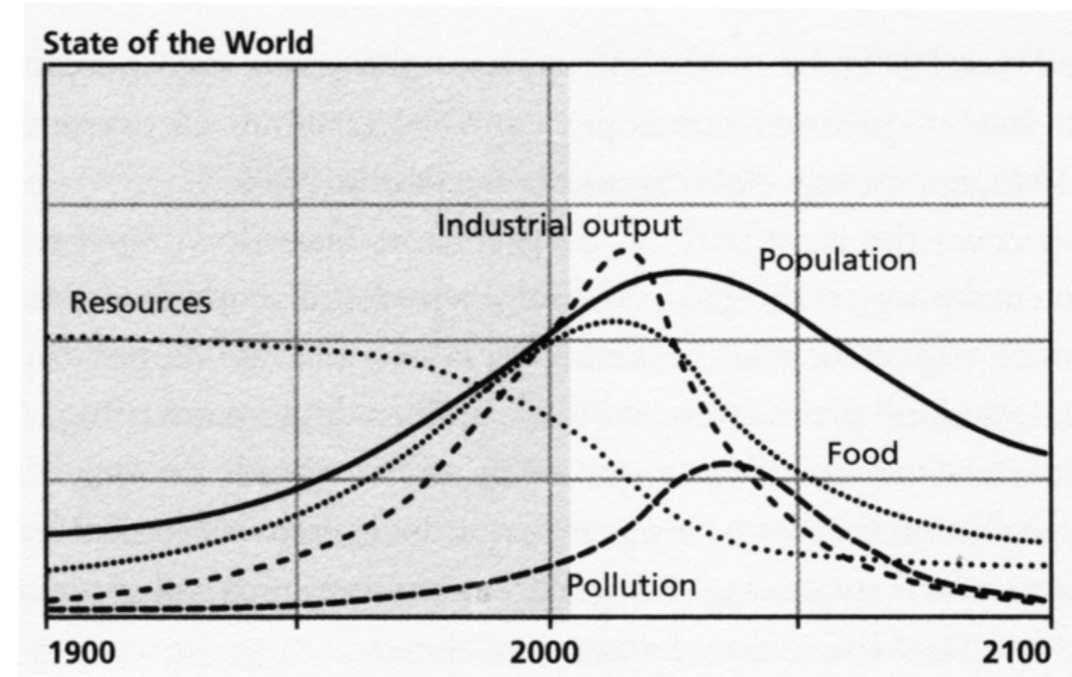
1. The business-as-usual scenario* might cause global economic collapse and precipitous population decline could occur by 2030

2. The sustainable growth* can save us if governments forged policies and invested in technologies to regulate the expansion of humanity's ecological footprint

3. The radical revision
The urgency of environmental protection msight mean you can't have your next iPhone



[fig.4] Club of Rome 1972



2 Congress commissioned Kuznets to create a system that would measure the nation's productivity in order to better understand how to tackle the Great Depression. Simon Kuznets, 1934. "National Income, 1929-1932". 73rd US Congress, 2d session, Senate document no. 124, page 5-7

3 The phrase is from Ursula Le Guin, whose social science fiction novel *The Dispossessed* (London: Panther, 1975) provides a vivid exposition of a degrowth world.

2. Problem statement

2.1. Definition of problem - Limits of the growth

In 2017. Gross Domestic Product (GDP) is the number used for measuring the economic performances of geographical regions, cities, countries etc. What this number tries to reflect is potential of produced surplus to be invested in well-being of society. As long as the GDP is positive the economy of the measured community is growing and consequentially this means the quality of life is rising. This means that we measure the successfulness of the economy based on the growth.

Measuring the economic performance this way has a few major limitations. Already Simon Kuznets², the economist who suggested the first comprehensive set of measures of national income expressed the scepticism towards using the economic growth to evaluate the success of national economy:

'Distinctions must be kept in mind between quantity and quality of growth, between costs and returns, and between the short and long run. Goals for more growth should specify more growth of what and for what.' (Kuznets, 1962)

Later the criticism towards this measurement tool developed further. Today it is more clear that it doesn't reflect true social conditions since it doesn't reflect inequality, uneven development, unpaid work (care, illegal work, household work, etc.), political liberties

and finally the harm that economic growth does to environment.

*'The conflict between environment and growth is ever-present. For "developers," the value of growth is not to be questioned: more mining, drilling, building, and manufacturing is necessary to expand the economy. Against developers stand radical environmentalists and local communities, who are often alone in questioning the inevitability of 'a one-way future consisting only of growth.'*³ (Kallis, 2015)

When talking about the economic growth as precondition for improving the quality of life it is often overlooked that the planet Earth is a limited system. This issue was presented in the book 'Limits of Growth' by Club of Rome in 1972. Group of scientists from MIT computed the future of needs of growing global population in terms of natural resources, energy, food etc. [fig.4.] Combining it with Malthusian scepticism of how much can we actually develop our technology and organizational systems they predicted that with current growth rate by 2030 we will face global issues in production and distribution of food, water, energy etc. Orientation on constant economic growth, in combination with rising population, will at some point converge with the limits of how much natural resources we can extract from the planet Earth. It then became a question how soon will we meet these limits and how we can orientate towards them?

2.2. Growth as an ideology

"Anyone who believes in indefinite growth in anything physical, on a physically finite planet, is either mad or an economist."

– Kenneth E. Boulding

In development oriented discourse economical growth is one of the central concepts. As explained above growth is an essence of how the economies are not only compared but led. Crisis of global economy showed that many concepts of neo-liberal economy are subjectable to criticism. However, growth was not often mentioned as principle that stands behind the collapse that happens. Greek philosopher Castoriadis calls it secular equivalent of religious dogma. (Kallis, Demaria, Deriu, 2015) 'The growth imperative' leans on assumption that without economic growth of 2-5% per year the healthy conditions for socio-economic development can not be sustained. (ie. The Balance, 2016) This claim became especially strong during golden neo-liberal age of 1990s. Under influence of this idea we have been developing our cities, economies, housing and lives for almost 3 decades now.

Growing criticism of radical environmental movements and authors revealed the odds between the ecology and growth. Instead of questioning the principle of growth the discussion resulted with the concept of sustainable growth. Defined as *"development that meets the needs of the present without compromising the ability of future generations to meet their own needs"* (World Commission on Environ-

ment and Development, 1987), sustainable development has emerged as the guiding principle for long-term global development. Consisting of three pillars, sustainable development seeks to achieve, in a balanced manner, economic development, social development and environmental protection. The rise of mainstream discourse on sustainable development effectively erased the radical promise of ecology. (Kallis, 2015)

'The notion of sustainability that emerged from the 1992 Earth Summit neutralized and depoliticized the conflict between environment and growth. Since then, negotiations between government, businesses, and "pragmatic" environmentalists have assumed that new markets and technologies can simultaneously boost economic growth and protect natural systems. Environmental problems have been largely consigned to the realm of technical improvement, the province of experts and policy elites.' (Kallis, 2015)

Seeing that the imperative of growth managed to incorporate itself in visions of sustainable future the environmentalists set the more direct demand in form of 'De-growth' to question de-politicization of environmentalism and 'oxymoron of sustainable growth' (Latouche, 2009). The economic prosperity in this case is conditioned by the social prosperity which is further conditioned by the ecological prosperity whose sustainability is a priority that sets the framework for all human activities.

2.3. Problem statement

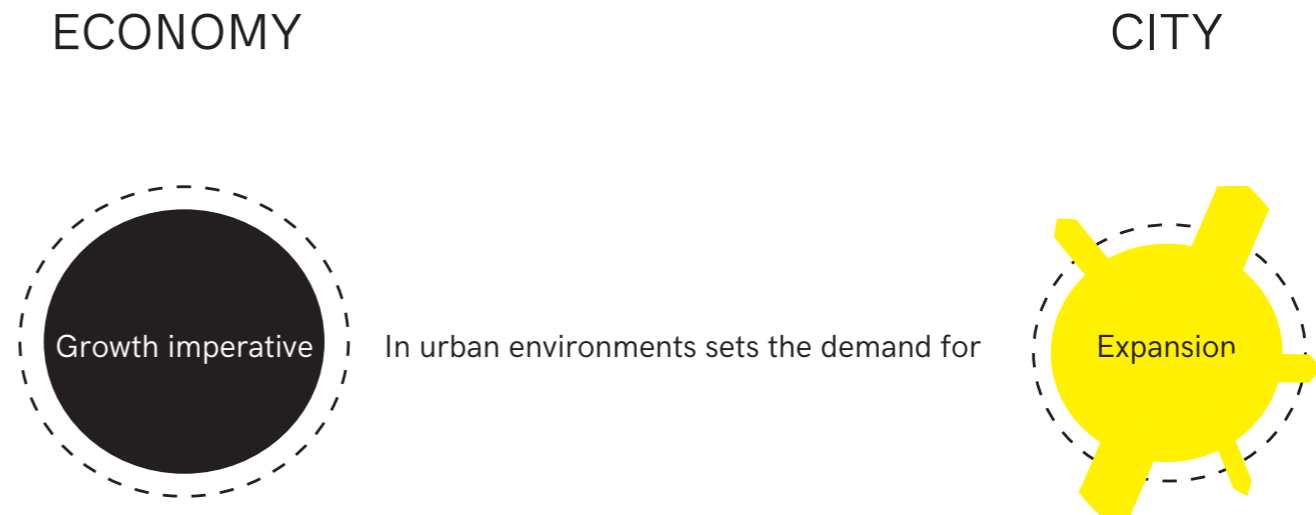
The incorporated absurdities of indefinite growth and even 'sustainable growth' on the planet that is finite system need to be challenged by the urban planning agendas. The imperative of economic growth hold a strong standpoint in our economic and professional discourses. However the cities and governing systems show inability to cope with the challenges of migration and changing living demands and are unable to fully control the impact they make on the ecological system they belong to. Economical growth demands spatial growth. More we produce more space and resources we need. The growth imperative is major paradigm of contemporary development that has negative reflections in urban areas of Europe. The urban small economies are endangered, housing is becoming unaffordable, cities are becoming more dependent on large infrastructures, public space is underused or misused and ecological footprint of the cities is increasing. These and many more urban problems can not be tackled while keeping 'the business as usual' in terms of economic growth that fosters development.

As planners we have the responsibility to make cities more resilient but at the same time less demanding for the Earth's limited biological systems.[fig.9] In the context of our restlessness in demand for better life and recognition we should strive for complement solutions with environmental issues. Otherwise, the scarcity of natural

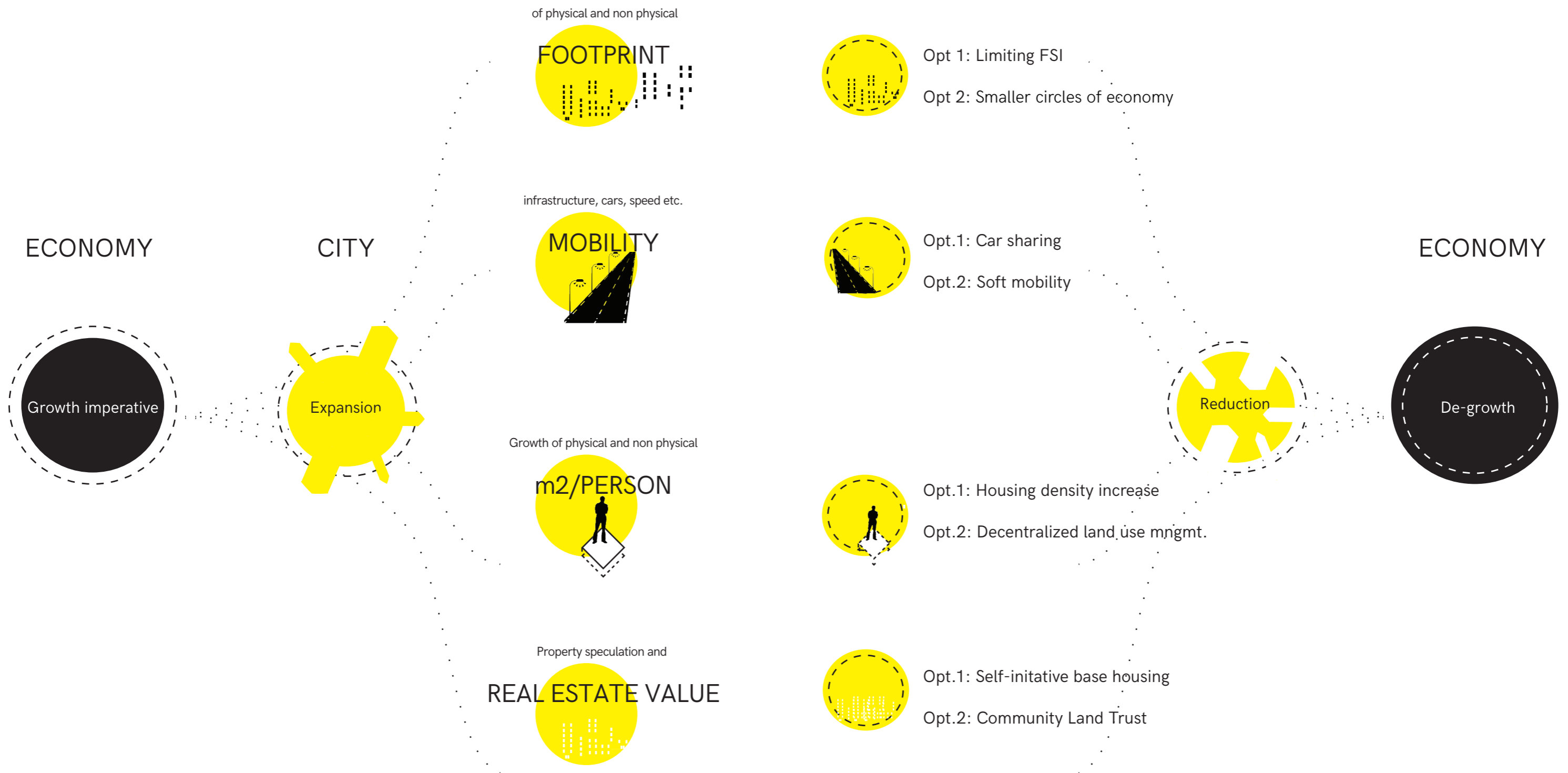
resources and pollution will increase the bad conditions of life. The way how we live and produce the space in the cities can incorporate solutions for more responsible interaction with planet and redistribution of resources.

2.4. Growth paradigm in urban planing

The way how economic growth takes its form in urban environment is expansion. [fig.5] Either we talk about expansion of spatial and environmental footprint, square meeters per inhabitant in housing, mobility options that require infrastructure, scales and types of services etc. Not always spatial sprawl of urban amenities increseas not only diversity and complexity of urban life but also its demand for increased mobility and bigger speed of exchange of goods. This expansion is always made possible through efforts of urban planning that are tuning all the interests into set of procedures that adopt space to these demands. This especially true since the municipal insitutions took role of enabling fool freedom of market. Legitimizing this way various expansions in space and demand planing not only confirms but also fosters growth paradigm.



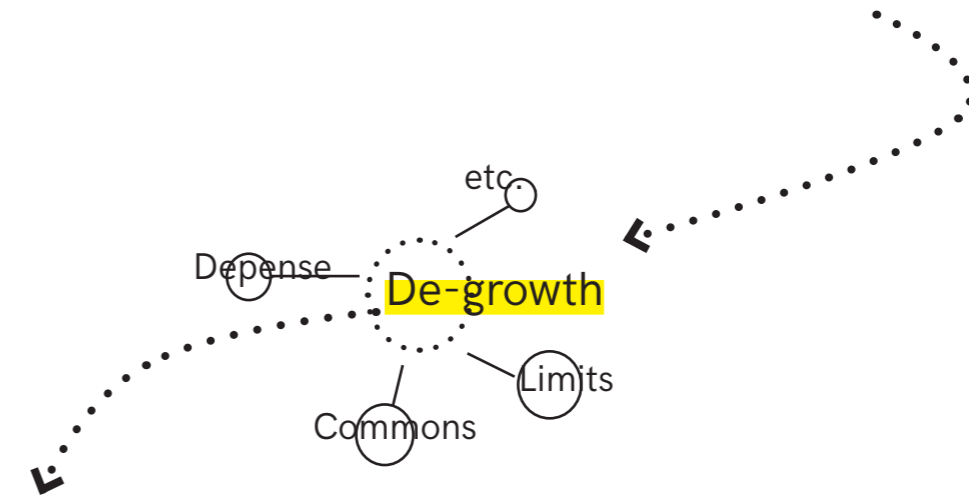
[fig.5] The grwoth reflects in physicall and non physicall expansion of cities





'I need a rest...from Growth'

De-growth is a environmentalist and poltical concept that insists on prosperity not based on growth imperative



Implications for urban planing?

City of Rotterdam emerged on strong paradigm of economic growth and top-down planing. Can we imagine or even plan it in different direction?

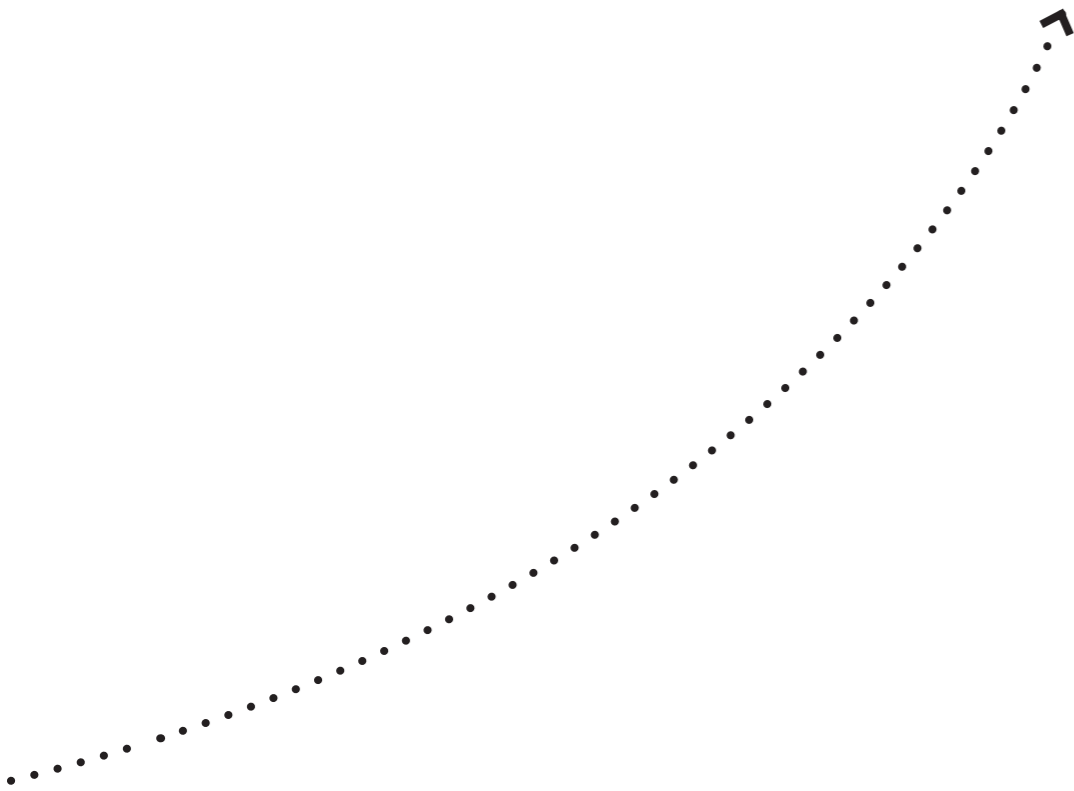
[fig.7] Diagram of problem statement

3. Research question

Overall, thesis tries to examine in depth indications of the De-growth theory for urban planning and to draw spatial implications from that. The chosen case study is the city of Rotterdam, known for its growing harbour and top-down and growth based paradigm of urban development. The goal is to link economic and environmentally oriented theory of De-growth with urban planning via researching possible transformation solutions and optimizing them according to concrete locations.

More on objectives and aims of the graduation project in following chapters.

What are the spatial implications of applying the De-growth principles in urban planning of the city of Rotterdam?



By 2030 Rotterdam expects to build 20 000 new housing units

There is 0.9 cars per inhabitant in Netherlands

In 70ties average apartment was 64 m², today is 90m²

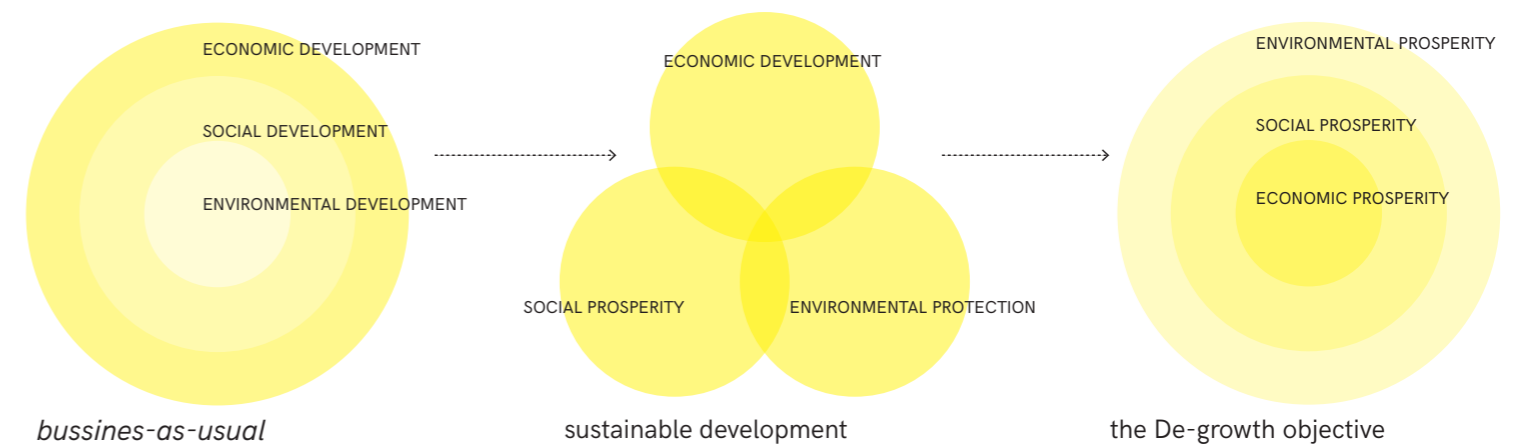
Average price of housing in Netherlands has risen 15% per square meter in last 10 years

3.1. The seed of Degrowth

The Club of Rome's view on the future of our society derives from the fact that our planet is a finite system and as such can not provide us with the endless resources. This implies three possible scenarios that put in relation growth and societies position on it [fig.8]: (1) The business-as-usual scenario will cause global economic collapse and precipitous population decline could occur by 2030. As already stated presumption for continuing of capitalist way of distribution of resources is that economy grows 2-5% yearly. That would mean that our economy has to double every 20 years. That is not sustainable in context of climate change, pollution in general, and global tendency of decrease in population growth. (2) The sustainable development scenario can create sustainable future if governments forged policies and invested in technologies to regulate the expansion of humanity's ecological footprint. However it still incorporates the growth which, as previously shown, is not complement with ecological imperatives that we are facing. Finally, (3) The scenario predicted by Club of Rome and confirmed by number of later studies and extinct species urges going consciously backwards in terms of rapid development. It would mean a commitment not just to protect nature and ensure sustainability but to prioritize it, followingly create a conscious step into less resource intensive forms of social and economical interactions.

De-growth is a 'missile concept' (Latouche, 2009) that is developed to challenge the terms under which current development occurs. It is more the pragmatic concept than political and pro-active restraining from economical growth and resetting the preconditions of human development.[fig.8] To de-grow does not meant to starve the society into recession and inflation or to stop all forms of developments. It means to teach it the importance of 'diet' and think of those directions of developments that are left aside by the current capitalist dominance. The goal is not a negative rate of growth, but to collective deceleration of economy. De-growth is therefore not possible in a consumerist society where commercial credits are used for producing planned obsolescence and created desires are based on extrinsically renewed necessity. Here degrowth claims two important fields for implementation of change: (1) the individual which has to be re-politicized about his/her everyday choices as well as his/her everyday interaction with community and society and (2)the political and distributive systems that have to take in consideration limits of our planet.

Here degrowth claims two important fields for implementation of change: (1) the individual which has to be re-politicized about his/her everyday choices as well as his/her everyday interaction with community and society and (2)the political and distributive systems that have to take in consideration limits of our planet.



[fig.8] Seeing that the imperative of growth managed to incorporate itself in visions of sustainable future the environmentalists set the more direct demand in form of 'De-growth' to question de-politicization of environmentalism and 'oxymoron of sustainable growth'(Latouche, 2009):

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Forget 'developing' poor countries, it's time to 'de-develop' rich countries

Jason Hickel

As the UN's new sustainable development goals are launched in New York, there's little to celebrate about the business-as-usual approach

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Introduction

Executive Summaries

Global Shifts

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- Jean-Claude Burgelman, European Commission – A "New Deal" on Green Growth

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The Rising Appeal of a De-Growth Future

When Youngsters' "Wandering Society" Desires Become Possible with Technological Advances and New Ownership Concepts

Seongwon Park, Science and Technology Policy Institute (STePI)

3.2 Problem field & Hypothesis

De-growth is by words of Latouche, "a political slogan with the theoretical implications", whose function is to open up conceptual and practical opportunities for escaping the impasse and mentality of the current economy based on fixation on growth.

The chosen focus on the concept of De-growth comes from necessity to discuss intended futures that will make cities less demanding for the Earth's limited ecological systems and simultaneously better places for life. New language that is offered by De-growth sets a field of potential solutions (Care, Conviviality, Commons, Simplicity, Anti-utilitarianism, Redistribution, Sharing of work, Environment, Food production, Energy, Concentration of goods, etc). This language has not been investigated in the context of urban challenges where different 'scales' interact intensely. The true challenge is to sketch the spatial implications of this language.

While being widely investigated in fields of economics and alternative social and ecological practices these futures are not so explored in spatial terms.

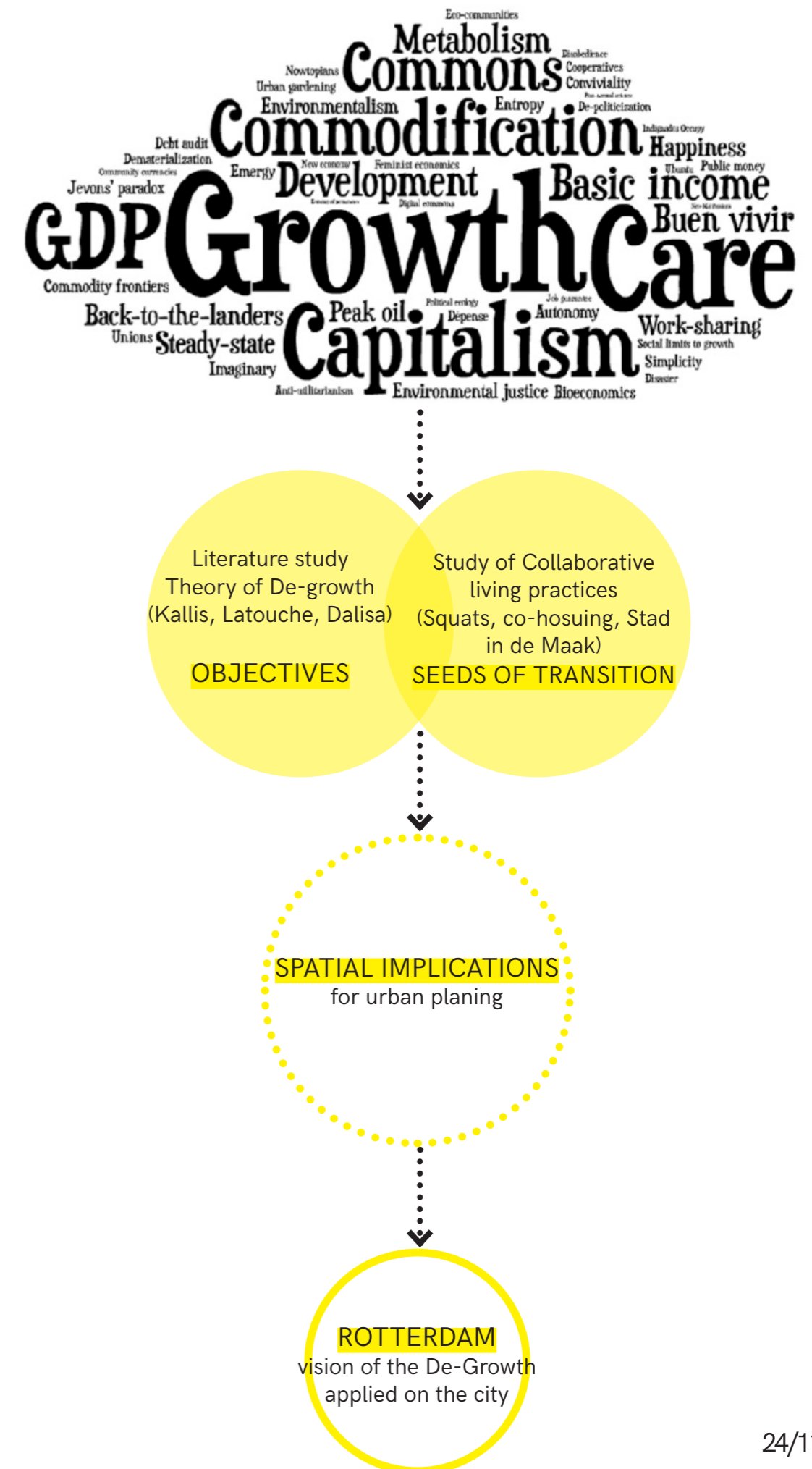
Therefore, a key degrowth thesis is that (the science and practice of) economics has colonized and depoliticized collective social choice. Indeed the degrowth project is not conceived by its advocates as merely a bio-physical question of "staying within limits" or producing and consuming less

(one can easily imagine authoritative yet "green" or dematerialized futures and the movie "Matrix" provides an interesting science-fiction example of these). Degrowth is a broader project of "escaping the economy", re-embedding economic functions and decisions within the social and political sphere and hence deepening and re-politicizing our democracies (Cattaneo et al., 2012)

To determine the path for doing this sketch the project will combine theoretical inputs given by number of authors that worked on envisioning of De-growth (Latouche 2009, Kallis 2015, D'Alisa 2016) and case study of small-scale practices that combine living and working on the premises of intentional retreat from imperative of economic growth.[fig.9] In this context urban practices suggested by Kallis(2015) (ie. Urban gardens, grass-root neighbourhood initiatives, sharing the care work...) can work as converging points where theoretical field of the De-growth theory and condition of space meet. More on choice of case studies will be written in later chapters. However, one of the primary reasons is because in this examples collectively agreed values are most usually non-growth oriented and applied on everyday level with representative examples on how they shape their spaces.

Existing numerous non-growth practices are already putting this urgency into action. The principles they are formed around result in conceptions that can be traced in space.

This analytical path I followed to established first set of conclusions about potentials of De-growth in space making. Combining literatures study with comparative example study basing principles are derived. Challenge of the approach is to upscale these conclusions and to contextualize them in generic types of urban fabric. Test ground of the project is city of Rotterdam, known for its growing harbour and top-down and growth based paradigm of urban development. More specifically it is a strip of urban areas in contact zone between the city's housing areas and the harbour. Here the study of 7 types of urban fabric gave information on potentials for implementation based on state of amenities, economic and housing conditions, infrastructure and mobility. Combining analytical and design based methods conclusions are derived on two levels: governance and spatial morphology. This process did not draw blueprint for implementing De-growth but it set foundation and ceiling for how the language and some converging concepts (ie. Commons) can be implemented in general discourse of urban planing.



[fig.9] Hypothesis for answering the research question
 source: [image] De-growth, A vocabulary for new era, 2015, D'alisa, Demaria, Kallis

QUESTIONS	<p>RQ What are the spatial implications of applying the De-growth principles in urban planning of the city of Rotterdam?</p>					
	<p>Q1 How the imperative of growth shapes the city of Rotterdam?</p>	<p>Q2 How does new non-growth oriented economy influence space in example of everyday practices of collaborative housing/working?</p>	<p>Q3 What are the spatial implications of the Degrowth theory?</p>	<p>D4 Spatial indicators of the De-growth transition?</p>	<p>D5 City scape that is produced based on De-growth</p>	<p>D6 Transition towards De-growth</p>
METHODS	Study of history, Spatial analysis,	Comparative study	Literature study Research through design	Site analysis, Literature study	Design 1:1000	Strategy development
TECHNIQUE	Mapping, timelines Study of publications	Participation, Comparison, Reading of literature Theory paper	Reading of literature, Sketching, Analogy	Mapping, data comparison, Research through design	Design, Examples study	Phasing, literature study
OUTCOME	Analysis -Choice of scale -Choice of areas	Method of application -Method of implementation -Choice of models for implementation	Towards design -5 groups of spatial inputs -Strategy on regional level -Goals of design	Tables of indicators -7 Urban types -5 spatial inputs -set of tactics	Design proposal	Action plan -set of tactics -phases of transition -governance model

[fig.10] Table of research methods and outcomes

source: [image] De-growth, A vocabulary for new era, 2015, D'alisa, Demaria, Kallis

PURPOSE: DE-GROWTH & PLANING





What impact would De-growth have on cities?:

URBAN LEVEL

NEIGHBOURHOOD LEVEL

GOVERNMENTAL LEVEL



4. Rethinking cities without growth

4.1. Field of objectives

The main objective of the project is to open up conceptual space for imagining and enacting diverse alternative futures that share the aims of downscaling affluent economies and their material flows in a just and equitable manner.

In order to reach the objective it is important to relate the implications of De-growth to general topics of urban planning such as infrastructure, flows, urban fabric etc. In order to make this relation clear the project starts its analysis from the negative consequences of growth based economy on the city. By drawing the relation between the economic growth imperative and urban conditions produced an argument for the De-growth theory is built. After this step the new concepts that are defined by the body of literature needs to be translated into context of urban planning. Here the urban planning is materialized by conceptual strategy for the city of Rotterdam. The strategy is not thought of as a literal directive for implementation of the values through guidelines and measures in space. It is more that the outcome needs to be useful as a tool for discussion and empowerment at the same time for those familiar with the De-growth concepts and those unfamiliar.

The proposal will use the conceptual strategy designed on the regional scale based on set of spatial inputs to derive into a proposal for smaller scale models of implementation. This step makes project transferable and re-scalable.

The combination of the two will work as a 'survival guide' for the De-growth future in post-capitalist society addressing two groups of potential users. (1) Urban planners that should find a new visual language and guidelines for getting familiar with the concept of De-growth and (2) small scale practitioners of collaborative and convivial refrain that should be able to use it to empower their own ideas and understand importance of networking and thinking in bigger scales.

4.2. The De-growth theory

Since the objective is translation of environmentalist theory into realm of urban planning it is important to set the definition of what the theory is.

De-growth is the intentional redirection of economies away from the perpetual pursuit of growth. For economies beyond the limits of their ecosystems, this includes a planned and controlled contraction to get back in line with planetary boundaries, with the eventual creation of steady-state economic system that is in balance with Earth's limits (degrowth.eu, 2010)

Contemporary capitalist society directs its surplus into new investments to ensure the economic growth that consequentially will produce new employment, wealth and market exchange. [fig.11] This is the key how the growth became a condition for improving the living standards. It is on this base that GDP is used to evaluate the successfulness of the economies. However it was not always the case that surplus is used for perpetual inducing of consumption and intemperance. In history different societies directed the surplus into different non-productive expenditures (ie. Egyptian pyramids, Tibetan monks etc.) [fig.12]

The De-growth is challenging not only the distribution of surplus but the values that are presented by its reinforcement in society. Idea of De-growth is a society that is prosperous society in which, as Latouche explains, 'we can live better whilst working less and consuming less'. As economist Tim Jackson puts it in user-friendly way it is about 'prosperity without growth'. (Assadourian, 2012) [fig. 13]

4.3. Envisioning of the De-growth theory

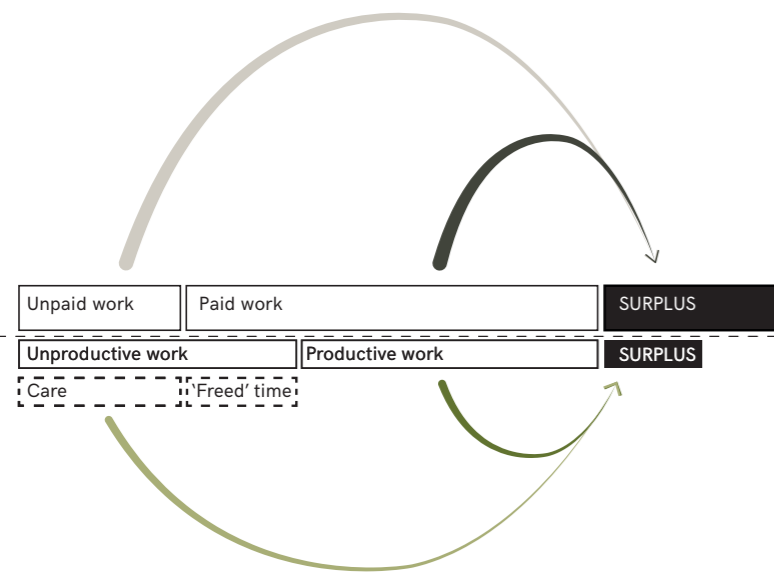
As Latouche indicated this intended contraction can be made possible by re-evaluating, reconceptualizing, restructuring, redistributing, relocalizing, reducing, re-using and recycling different forms of surplus that is created. (Latouche, 2009) This is crucial input for imagining the intentional, convivial and sustainable contraction in a circular manner.

This has to be adopted by, on one hand individuals through their personal habits and on the other hand the human systems that are managed through laws, regulations and values. In order to achieve this Latouche's indicators have to be further developed into pragmatic steps. However this is not easy:

Advocates of degrowth refrain from offering any one blueprint to replace today's growth-centric "free" market. Their objective is to open up conceptual space for imagining and enacting diverse alternative futures that share the aims of downscaling affluent economies and their material flows in a just and equitable manner. Reducing such material flows would likely lead to a decrease in GDP as currently measured.

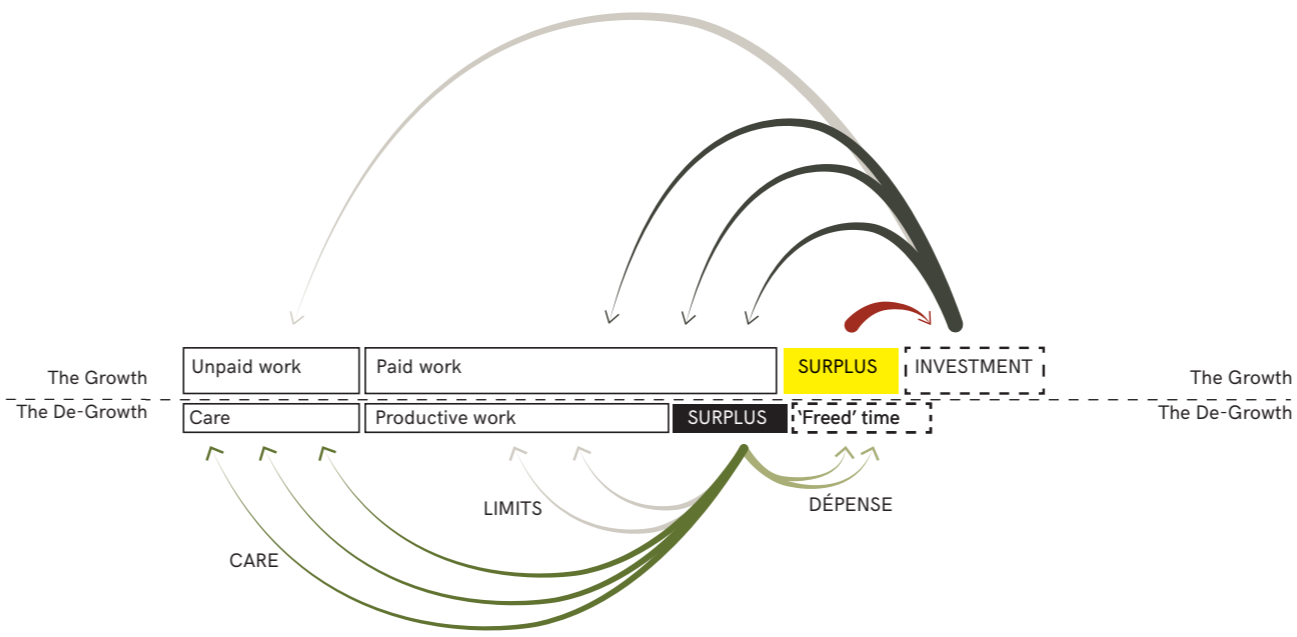
However, degrowth is not synonymous with recession or depression, the terms we use for negative growth in a growth economy. Degrowth, instead, involves a rethinking of the organization of society signaled by terms such as limits, care, and dépense. (Kallis 2015)

By limits here are meant 'self limitations' of individuals and systems to refrain from pursuing all that could be pursued. (ie. caps on carbon emissions, 100% reserve requirements for banks etc.). By care it is meant the revaluation of services and unpaid work that should be the foundation of creating the economy based on reproduction not expansion. (ie. Child care, elderly care, participation, maintenance and repair etc.) And finally Dépense means the unproductive re-direction of social surplus in terms of



[fig.11] Production of surplus in the growth and De-growth society

source: author

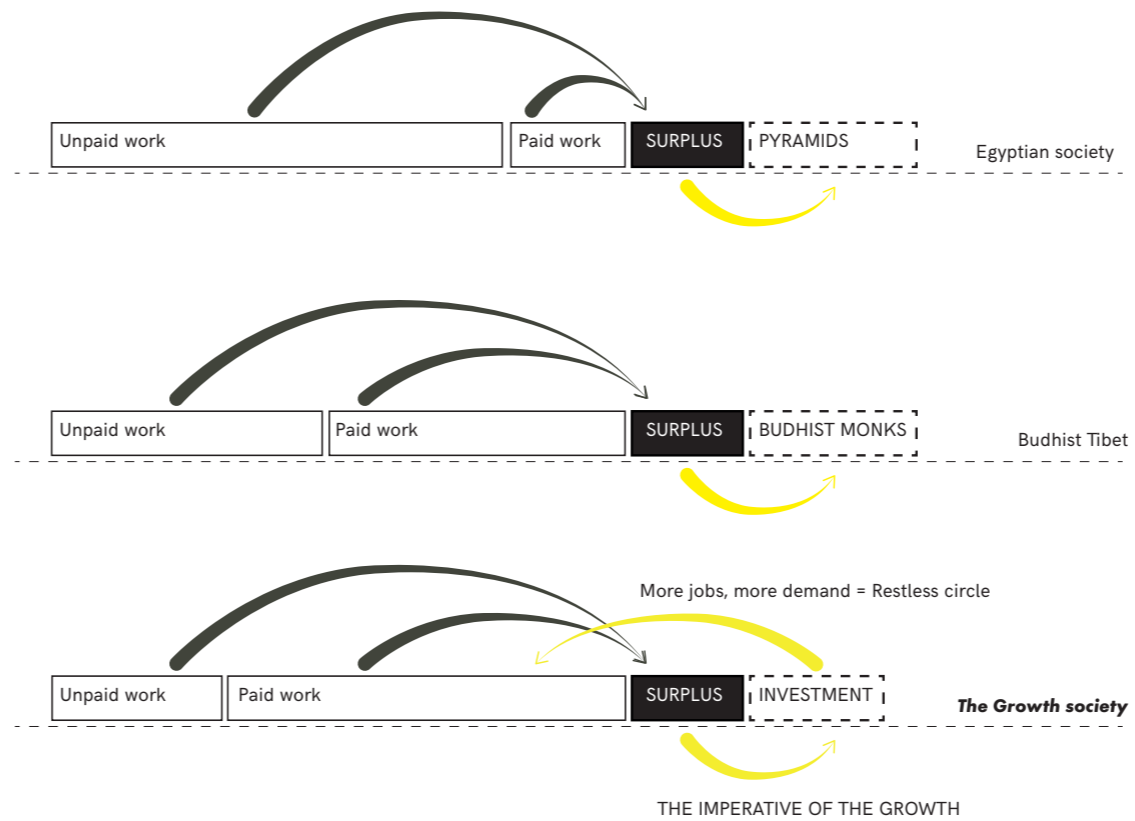


[fig.12] Distribution of surplus in the growth and De-growth society

source: De-growth, A vocabulary for new era, 2015, D'alisa, Demaria, Kallis

allocation of it into other realms of life such as festivity, freed time and social interaction (Illich). [fig 12.]

Here only few concepts are presented that are developed in the theoretical work of the others. These concepts are used as a foundation for thinking how to translate ecologically driven principles into filed of urban planing.



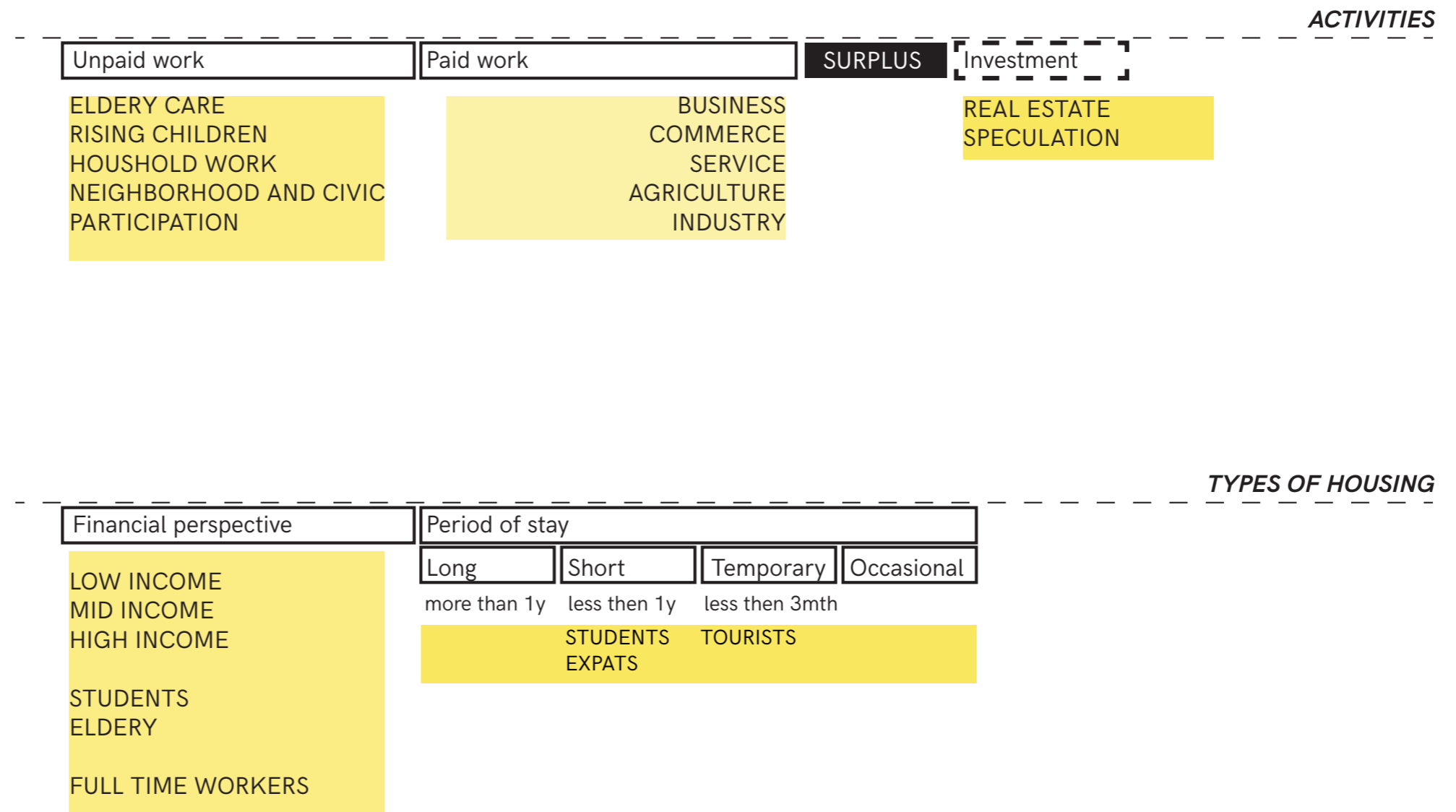
[fig.13] Different societies distribute surplus differently

source: Alternative of Degrowth, 2015, Kallis

4.4. Labour and housing in De-growth

Analysis of official document of city of *Rotterdam Woonvisie 2030* brought my attention to how the official urban planning agendas recognize certain groups of dwellers and labour division. On its first page the vision states that the guidelines of the document are quality, balance and growth. (Geemete Rotterdam, 2016) Reading this document reveals that it recognizes only 5 groups of dwellers: those of low, middle and high income, then students and elderly. For all of them study assumes they are social climbers. For all of the inhabitants city assumes they are full time workers with some shades between creative workers and traditional employment. Distribution of space serves rather traditional zoning with little or no sense for representing the issues of unpaid work in space.

For this reason i dived into literature to see how De-growth renders dwellers in relation with labour and housing. Recognizable is strong attention to separation of labour to paid and unpaid. Here i dived it into productive and no productive in relation to surplus. Although not explicitly the theory implies that distribution of housing should include many variations of contemporary dwellers, nomads, seasonal workers, exactly based on recognition of unpaid or illegal work.

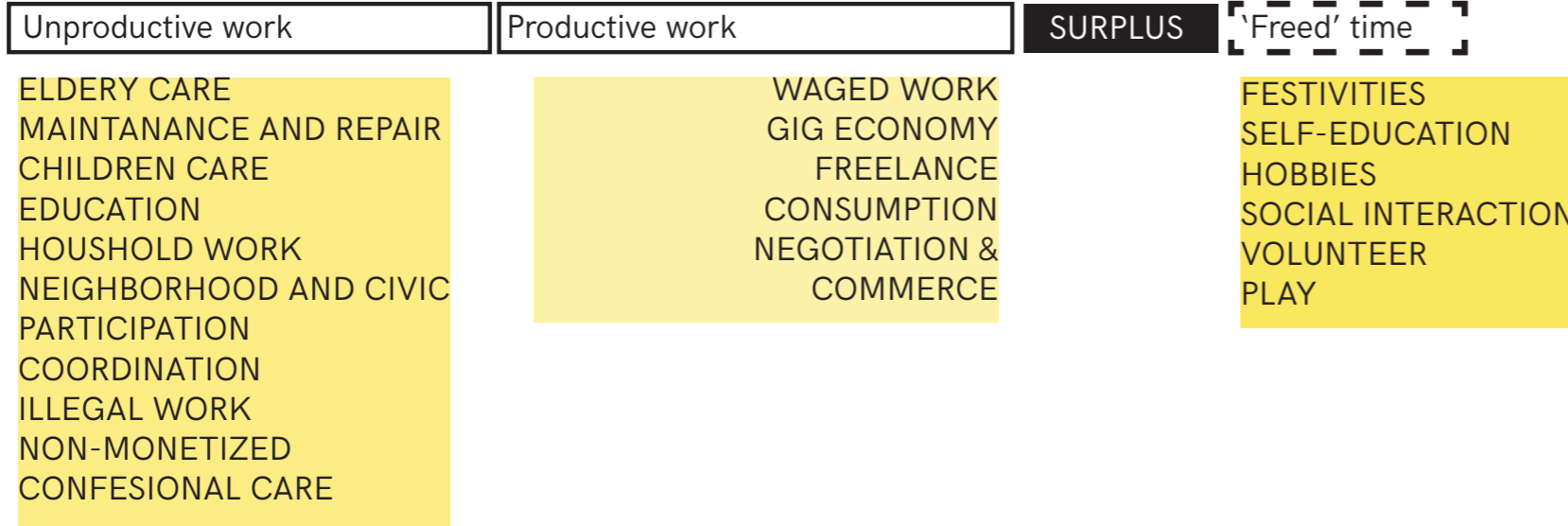


[fig.14] Distribution of labour and housing in growth cities

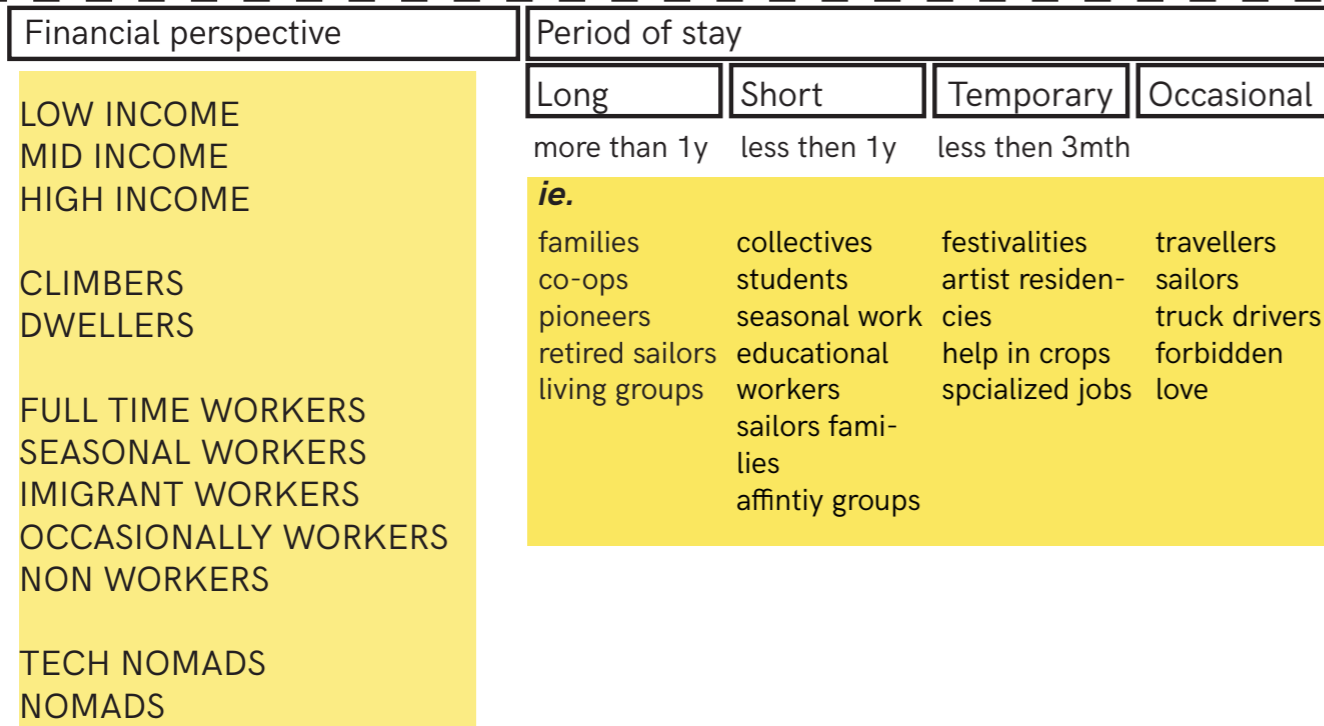
source: GEEMETE ROTTERDAM, *Woonvisie Rotterdam, koers naar 2030, 2016*



ACTIVITIES



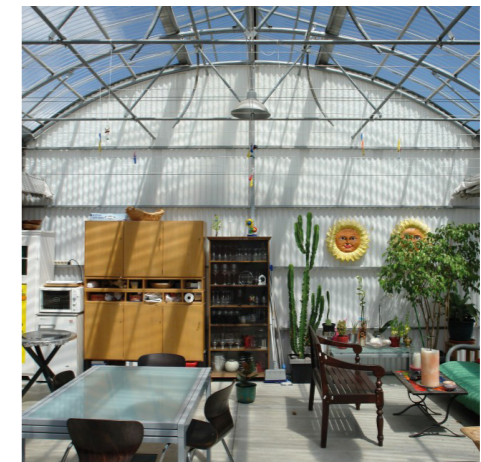
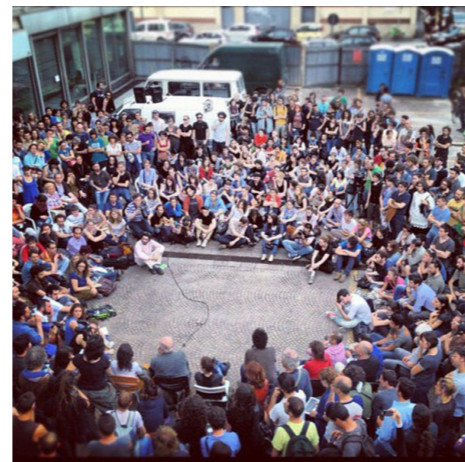
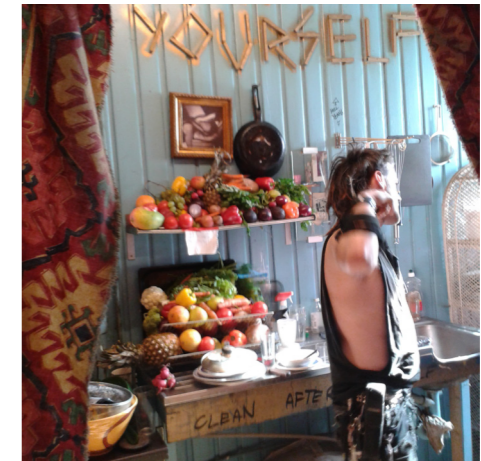
TYPES OF HOUSING



[fig.15] Distribution of labour and housing in De-growth cities

source: De-growth, A vocabulary for new era, 2015, D'alisa, Demaria, Kallis

Degrowth alternatives have begun to flourish as the formal economy has fallen into crisis. These include food production in urban gardens; co-housing and eco-communes; alternative food networks, producer-consumer cooperatives, and communal kitchens; health care, elder care, and child care cooperatives; open software; and decentralized forms of renewable energy production and distribution. These alternatives are often accompanied, or even supported, by new forms of exchange such as community currencies, barter markets, time banks, financial cooperatives, and ethical banks. Such projects display various facets of degrowth. They promote a shift to a more locally based economy with short production and consumption cycles. They emphasize reproduction and caring, to satisfy use values, not profits. They replace wage labor with voluntary activity. They do not have a built-in tendency to accumulate and expand, and they are less resource-intensive than their counterparts in the formal economy. Such practices of "commoning" cultivate solidarity and humane interpersonal relations, and generate shared, non-monetary wealth. (Kallis, 2015)



[fig.16] Images of non-growth oriented practices around the world

source: [online]various sources

Here lays the answer to the role of urban planning for implementation of De-growth. This means that urban planning for De-growth has to work with different scales of governance. From initiating neighbourhood assemblies and action groups on district and even block scale to taking boldly the power of municipal and regional governance to implement commons on city scale and beyond and further, to occupy the professional discussions aiming for implementing limits on expansion of motorized traffic or urban sprawl etc.

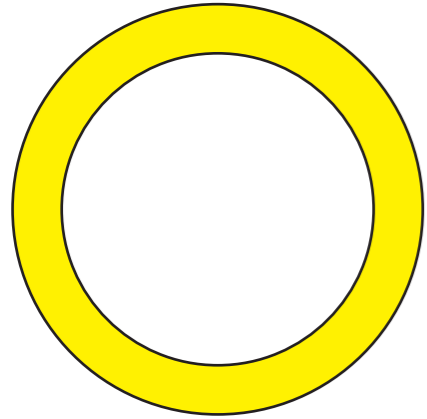
Urban planning in this case is designing the process of transition more than process of design of final outcome. Capacity of urban planning to design this process is essentially connected to different scales of governance. Urban planners with their knowledge and space as a tool can manage to lift many dispersed projects into comprehensive model of transition. Pioneers therefore have to occupy space, physical and professional and learn from experiences from different scales.

How to go beyond folk politics of spontaneous, always reactionary, small impact and un-systematic projects?

De-growth economy has a goal of creating an open systems in which social and especially economic prosperity are framed by environmental prosperity.

In case of cities it implies that cities are open systems, dynamic more than efficient, that redirect benefits of social interaction to environmental prosperity instead of economic one.

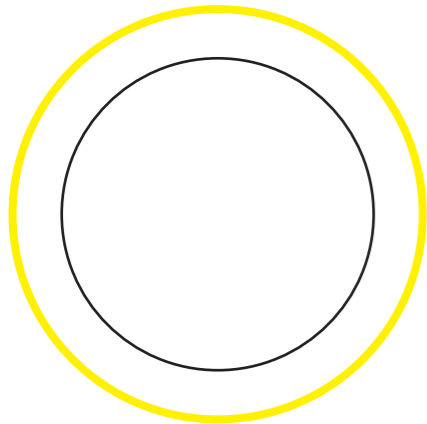
How can urban planning incorporate the De-growth theory:



Transferability and contextualization // Basis: Character of urban type

Spatial indicators of 100% De-growth scenario?

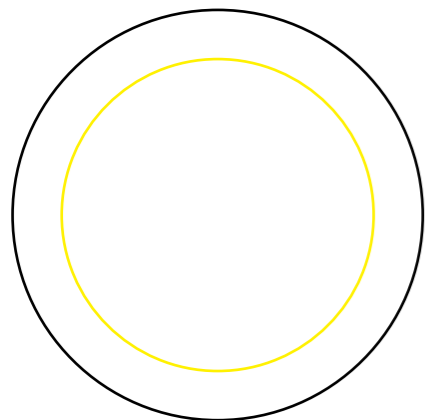
Scale: district- 7 urban types of Rotterdam west



Urban qualities // Basis: Design of streetscape and housing production

City scape that is produced based on De-growth

Scale: Block and street of Waalhaven and Pendrecht districts



Governmental structure // Basis: Relation of scales and actions to forms of governance

Transition towards De-growth

Scale: Interscalable City-district-block



SUB-RESEARCH QUESTION

Q2 How does new non-growth oriented economy influence space in example of everyday practices of collaborative housing/working?

METHODS

Comparative study

TECHNIQUE

Participation, Comparison, Reading of literature Theory paper

OUTCOME

Method of application
-Method of implementation
-Choice of models for implementation

4.6. Case-Study: Non-growth oriented practices - collaborative housing

When Kallis calls for recognition of grass-root practices such as co-housing, urban gardens, new currencies etc. as seeds for De-growth transition he points out that not all of them are consciously aware of their potential. However, he choose them because they are without exception re-defining the social relations and experimentally practising at least one if not all of the aspects of radical sustainability (social, economical, ecological) with intended non-growth principles:

Such projects display various facets of degrowth. They promote a shift to a more locally based economy with short production and consumption cycles. They emphasize reproduction and caring, to satisfy use values, not profits. They replace wage labour with voluntary activity. They do not have a built-in tendency to accumulate and expand, and they are less resource-intensive than their counterparts in the formal economy. Such practices of "commoning" cultivate solidarity and humane interpersonal relations, and generate shared, non-monetary wealth. (Kallis 2015)

For this reason analysis of this practices can give an answer to research sub research question: (Q2) *How does new non-growth oriented economy influence space in example of everyday practices of collaborative housing/working?*

When researching small scale non-growth oriented practices I hope to find a code for translating objectives they share with the advocates of De-growth into inspiring inputs for urban planing.

In vast diversity of different non-growth oriented practices I choose to focus Stad in de Maak in Rotterdam Noord. The project that defines it self as Pioneering urban economy based on collaborative practice.

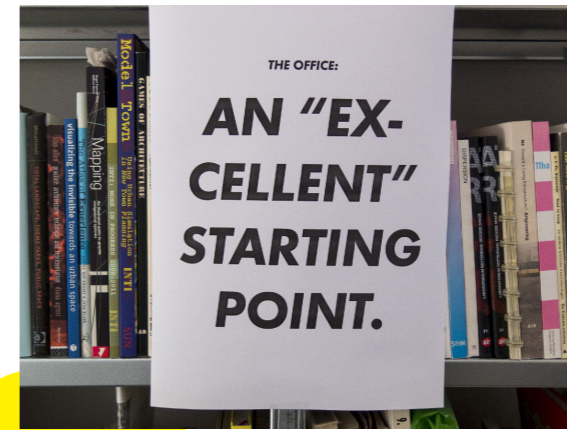
For two reasons. First is that their through participation I can have an insight in how they work. Working there one day a week and spending my time with people who collaborate on the project ensured me that their principles and objectives are closely conected to those of De-growth. They are not typical collaborative housing project because they insist on combining living with the work and they intentionally work on internalising circles of economy brining closer production and consumption. On top of that they practice recycling and reuse of materials and buildings. Also they are pro-actively implementing commons into their spaces and conviviality into their relations.

The other reason is that they are thinking of their work as a recipe for downscaling an economy and creating self-sustainable communities that can be translated to other places. While following set of long terms goals or principles they conceptualize them into their methods and everyday processes that finally result in particular production of space.

Their discussion's are focused on sustaining radical social and economical autonomy on long term plan and opening opportunities for upscaling and translating their concepts and methods into other contexts.

Because they are clear in their method of applying the theoretical principles in everyday practice i find their work researchable and insightful for my research.

However in making my conclusions I used my expirience from 6 years of living, visiting and observing autonomous communities, squats and collaborative living projects. In my comparison and observations I sometimes did not just reflect on what Stad in de Maak is doing but also my previous and current expiriences on the side.



Negotiating vacant properties in Rotterdam

Restoring them by hands-on communities

Housing and working spaces in collective ownership and management

Thinking of long-term socially and economically sustainable life in the city

[fig.17] Stad in de Maak's approach
source: SIDM_presentatie, SIDM, 2015

4.6.1. Stad in de Maak

Collective Stad in de Maak is Rotterdam based collective that is really into collective housing. 'City in the Making' has been initiated by Erik Jutten, Piet Vollaard and Ana Džokić + Marc Neelen (STEALTH.unlimited) and at this point they work with buildings in Rotterdam turning them into co-housing platforms. They are also initiators of Vrij Co-op, a international (covering Belgium and Netherlands) organization for exchanging experiences in collective housing.

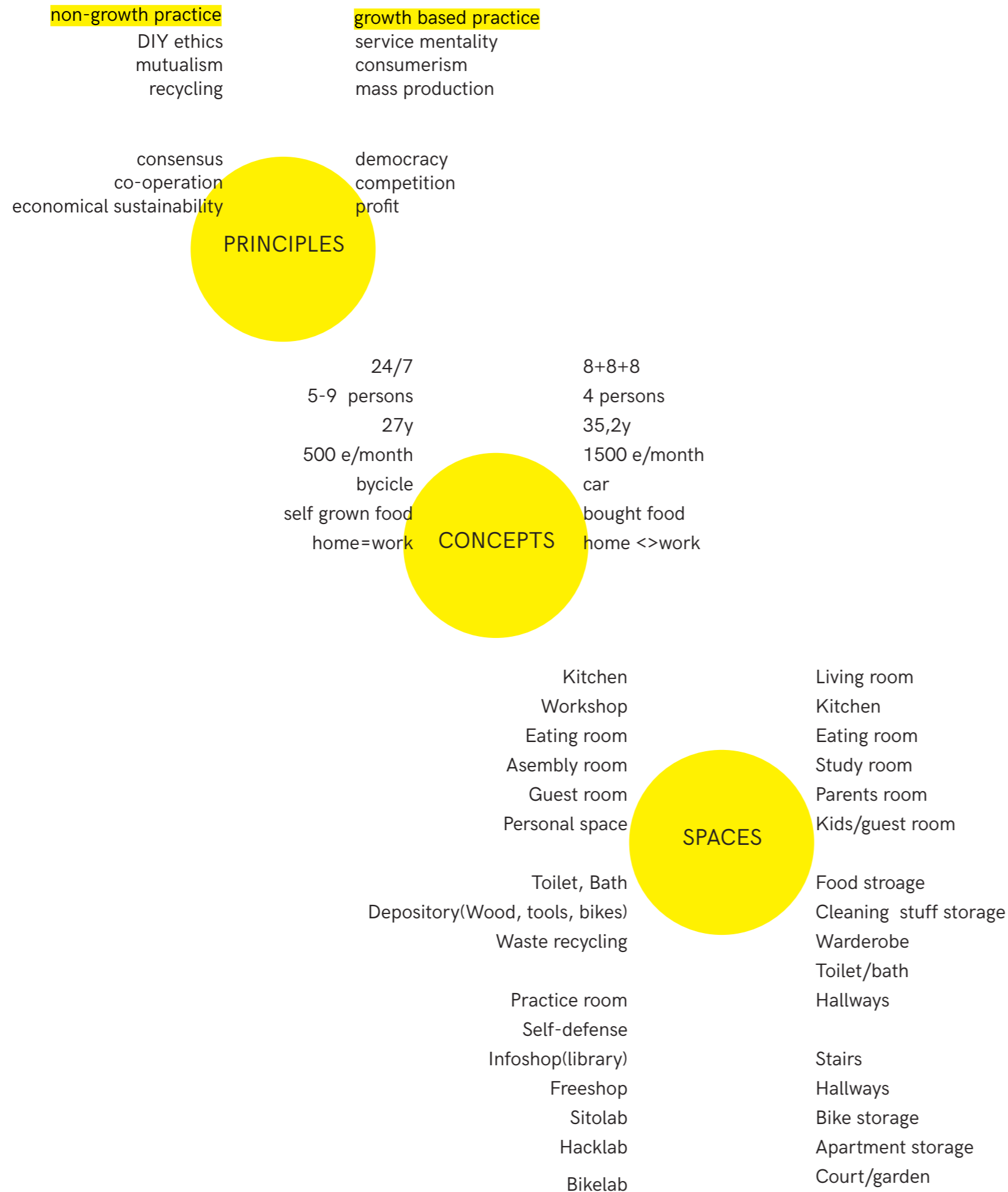
Their projects are clustered in Rotterdam Noord because that is the area where housing corporation Havensteder has most of vacant real estate. What Stad in de Maak does is negotiation of temporary contracts for vacant buildings where they set collaborative projects that combine living and work. Upper floors are used as living spaces being cheaply rented to young people that can't afford Rotterdam's prices. The ground floors are used as commons, from bicycle and motorbike repair shops to artist residences and co-operative businesses. They are together and example of implementation of new economy and new housing experiments. This area into self-organized hubs for experimenting in new urban economies, lifestyles and radically sustainable principles. These few houses are in nutshell showcases of possible redistribution of activities, re-scaling and re-localizing of neighborhood, commoning and networking.



[fig.18] Stad in de Maak's projects in Rotterdam
Noord area
source: author



[fig.19] Comparing non growth and growth oriented practices
source: author



4.7. Principles, concepts, spaces

Recently the idea of co-operative housing is gaining attention as a third way of housing production. This concept of production of space is based on horizontal and democratic organizing to manage housing as need while expropriating real estates from market and to certain extent eliminating the third parties from deciding about your own housing conditions.

In my research I wanted to encompass number of different practices in housing that can be described as collective effort in housing as collective social and economical experience. Examples can range from traditional state recognized co-housing projects, over squatting and temporary-use practices to finally temporary autonomous zones like protests, occupations and festivals. *As form of non-property led housing model it presents a critical engagement with dualistic structure of property.* (Buchholz, 2016)

In this sense, chosen examples *bring together new self-organized actors that are required social commitment to communities of shared values for alternative models of existence (ecological, economical, ethical, etc.).* (Buchholz, 2016)

In order to structurally present the knowledge and experience obtained in almost 10 years of participation in squatting and alternative living projects I will compare the basic principles, concepts and

practices with those that are part of more common perceptions that are present in majority of housing and initiatives that are not oriented on radical views of sustainability and imperative of growth. More detailly this will be presented in chapter 7.3.

By principles here are meant sets of values that are more or less successfully practiced in chosen examples. These principles are foundations for relating to existing patterns of social and economical interactions such as consumption and production, professionalism, distribution of surplus, ethical values etc.

Concepts are compared in terms of relating principles to every day life. Organizational patterns, perceptions, different comparable data represent the result of applying certain principles. They are in some cases measurable, in others they are symbolical, perceptual.

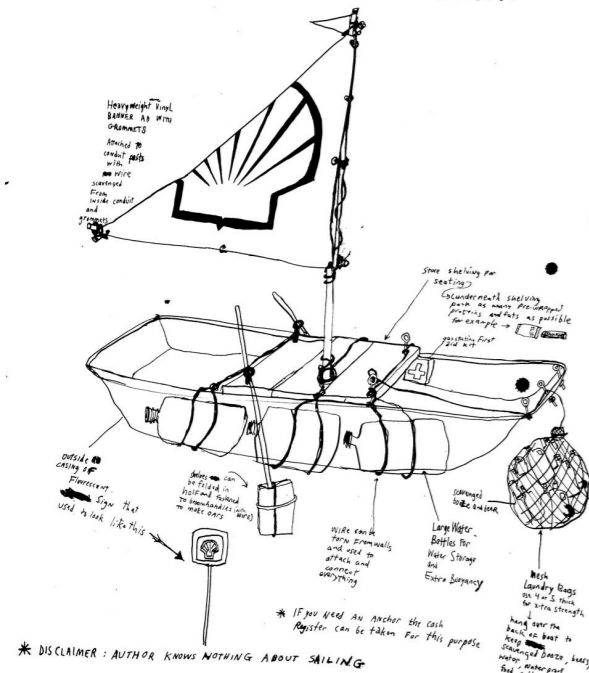
Finally spaces are most concrete and referable difference that is easy to communicate to everyone. The way how the space is organized, rooms that are appearing in case studies while not in traditional examples of housing show the difference.

As explained before, lack of larger relevant examples of intended refrain from orientation on economic growth directs me to experiences which I personally find most closest to what the goal of the project aims for.

[fig 20.]: artwork 'Making a Boat '(Essential Knowledge) by Colin Matthes

Making a BOAT

FROM THE RUINS OF A GAS STATION



SUB-RESEARCH QUESTION

Q3 What are the spatial implications of the Degrowth theory?

METHODS

Literature study
Research through design

TECHNIQUE

Reading of literature,
Sketching, Analogy

OUTCOME

Towards design
-5 groups of spatial inputs
-Strategy on regional level
-Goals of design

5. Research & Design (for De-growth)

5.1. Growth and the city

The research of the city of Rotterdam brought the focus on four main elements of the city which have to be taken in consideration: Harbour, river, open spaces and living areas. Historically the relation of the four was defined by the priority of development. Relation of these elements thus has to be seen through different eyes if the De-growth principles are considered. Transformation of harbour into more open and transparent space has to be in the root of general transformation. Areas where the harbour was open for new housing developments always were test grounds where the city implemented new agendas (Christaanse, 2015). Continuous transformation that take place on boundary between harbour and the living areas, river and both other elements are the key for seeking for locations for testing models of De-growth. 'The foreseeable future will be like this. It is interesting to think of these lands as temporary landscapes. When things get finished up and levelled-out there is little space for imagination left. Ok, that's it - but is it exciting? (Stealth. Unlimited, 2008)

Also the expected continuous rise of number of inhabitants implies densification and rethinking of housing distribution. Potential for this is definitely carried in the existing vivid showcase of experimental collaborative projects as analysis of

Rotterdam Noord's Stad in de Maak showed. These projects can become a seeds for different thinking of the city and region as whole. Different studies for future of Rotterdam give an importance to sustainability. Since taking a radically different position on concept of sustainable growth is central to the De-growth theory the space for new type of sustainability has to be found. Open spaces and again large areas of harbour that are waiting for development or transformation offer a clue. Rotterdam needs stronger relation to water finally. It has to be rethink as most common good of the city.

Insight in Stad in de Maak's practice gave a trace of what atmosphere and value can be produced with premises of slower, more content city dedicated to its more balanced role within the limited system of Earth. The topics such as commoning, combination of working and living space, conviviality, economy care have to be investigated more. This chapter shows results of this investigation.

5.2. Spatial inputs for Degrowth – 5 points

After the process of analysis of the given location and possible methods of implementation, next step is to transform the theoretical reading of De-growth into now familiar spatial context. For this 5 major urban planning topics are chosen to centre the implication of literature reading: Mixed use, Density, Public space, Infrastructure and Energy. By using the objectives that Latouche offered each of this topics is related to one of his objectives:

It will be recalled that the eight independent objectives that can trigger a virtuous circle of serene, convivial and sustainable contraction are: re-evaluate, reconceptualize, restructure, re-distribute, relocalize, reduce, re-use and recycle. (Latouche, 2012)

This way pairs are made that give an coherent set of spatial inputs to work with further. [fig.40]The redistribution of activities (care, commercial activities and commons) relates mixed use topic. Re-scaling and relation between everyday spaces for life and work are encompassed in topic of density where urban fabric and its content meet. Rethinking of public space in the city is set as third topic. The restructuring of infrastructure is the topic that has a potential to open discussion on changes in prioritizing different flows in the city. Finally rethinking the production of energy is set as independent topic.

In following five chapters each of the topics will be clarified more in

detail through relevance, purpose, method, scale and expected outcome.

Main 5 spatial inputs as combination of urban topic to be adressed and equivalent in terms of De-growth objectives:

a) Mixed use - REDISTRIBUTION OF ACTIVITIES:

A big amount of the care work and commercial activities would be redistributed among the community. Most of collective life would happen around commons that would reduce the need for tools, energy and time in terms of amount because of sharing of work etc. That means that Commons would have specific and precise function and would be used by many.

b) Density - RE-SCALING:

The core concept of distribution of goods in society would become Commons. Neither public, neither private concept of economic engagement would need a new type of connections and a lot of localized networking. This is a field to rethink the whole scale of neighborhood. Reduction of use of resources and processes of re-convivialization of tools would intensify social relations in the neighborhood. Number of activities would actually merge and have need to be closer to each other. The city would become more condensed and there would be bigger number of activities happening in a less amount of space.

d) Public space - COMMONING PUBLIC SPACE:

Since big part of life would happen in community and commons would take a new role in socialization and democratization of social relation there would be less need for the plain public space that does not have function. That means that it can be turned into green areas for recreation and ecological renewing of the urban landscapes.

c) Mobility - RE-STRUCTURE TRAFFIC (and food supply):

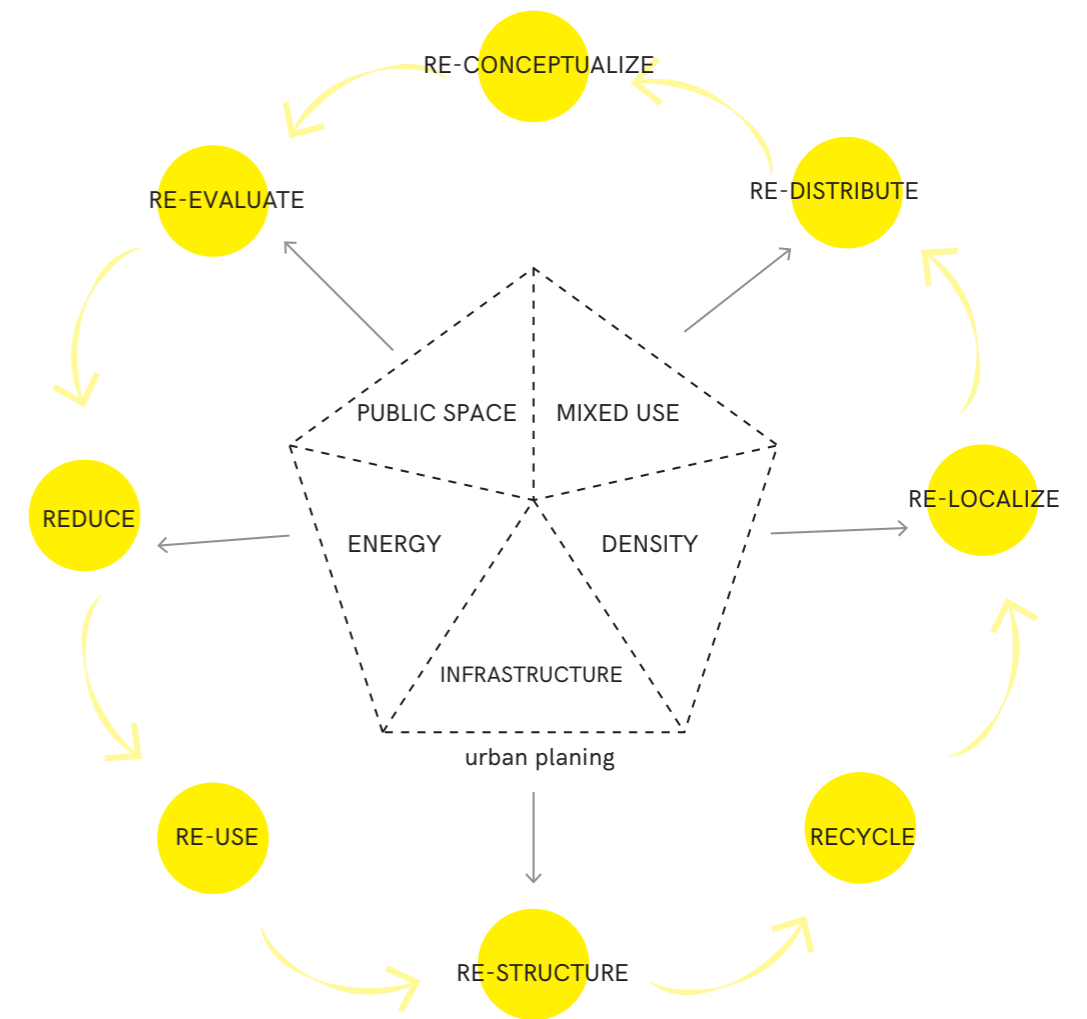
The city consists of large structures. One of the most spatially and energy wise demanding structures in the city at the moment is traffic infrastructure. In the Degrowth scenario this physical structure can be reduced to the minimum, even through forced measures. Amount of the space gained by this can be redirected to different function like *paideia*⁵, food growing, reducing ecological footprint etc. It can be used for a completely new infrastructure that can be build on the place of the traffic infrastructure. Like agricultural system for the new city or local production of energy.

e) Local production - RETHINKING LOCAL PRODUCTION:

Using energy efficiently is not a solution of limiting the growth.

Energy has to be used in the way that it is not taken out of ecological systems but using of it becomes part of the circle of ecological life. This goes same for energy and resources. Recycling and reuse are basic steps. So recy-

cling gardens, sharing and reusing material facilities, recycling facilities, small water collection lakes, wind turbines and other energy plants would become standard equipment of neighborhood. Question is the scale. Simplification and localization of life are some of the next steps in rethinking the using of our resources. That means that one's life would happen in certain radius of the city and he/she could get most of what they need there. This is main parameter for re-scaling things.



[fig.21] Connecting Latouche's objectives for Degrowth to urban planning
source: author

5.2.1. Mixed use-Redistribution of activities

(a)Relevance:

How to involve commoning and economy of care in urban fabric?

A big amount of the care work and commercial activities would be redistributed among the community. Most of collective life would happen around commons that would reduce the need for tools, energy and time in terms of amount because of sharing of work etc. That means that Commons would have specific and precise function and would be used by many.

(b)Purpose:

(1-Regional scale) To show cohesion between city, harbour and open spaces

(2-District scale) To provide guidelines for redistribution of activities in neighbourhood

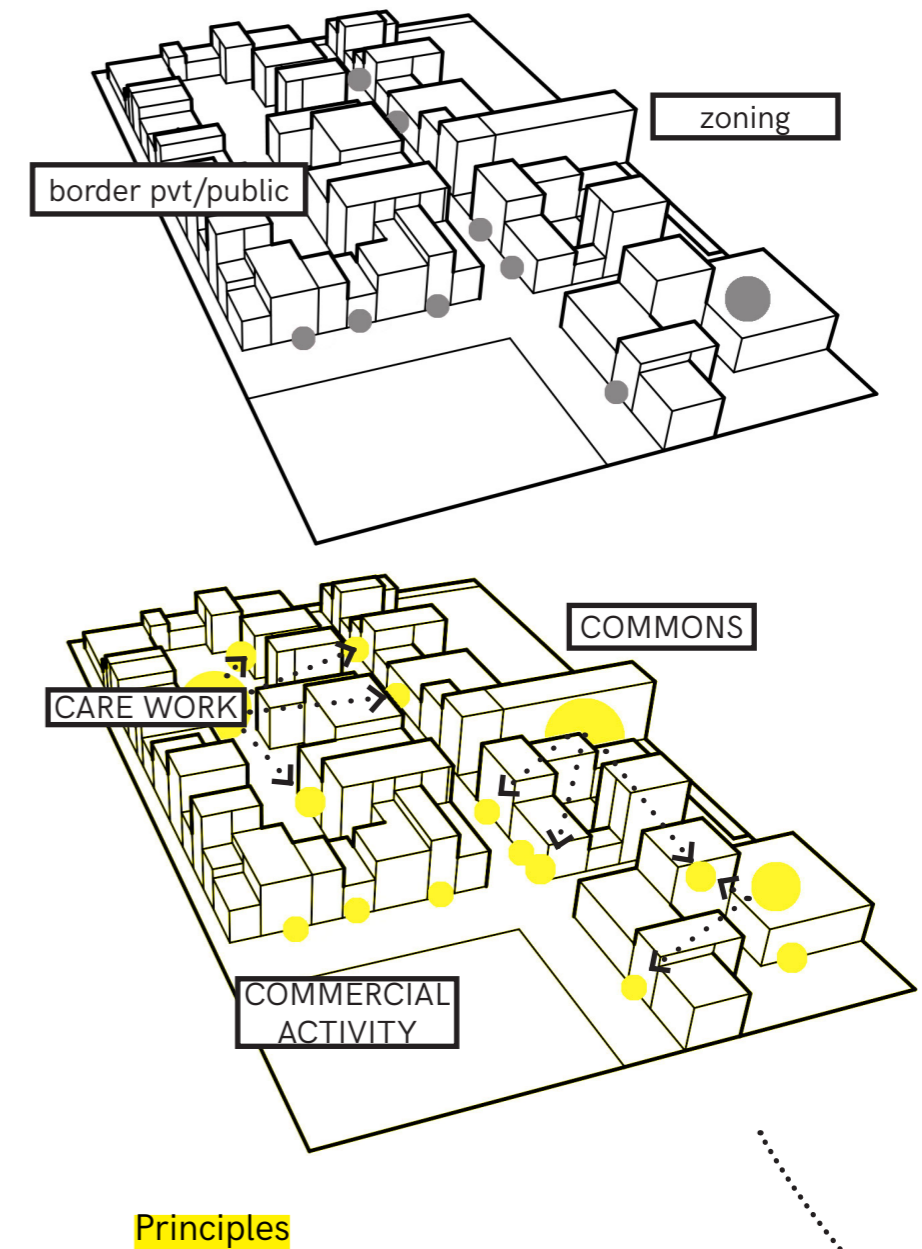
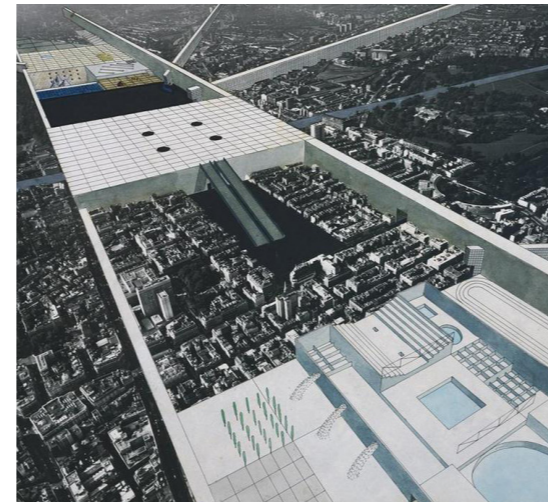
Envisioned transformation of the city encompasses transition from the globally competitive city towards locally self-sustained city. Consequentially it would mean that consumption would be less attractive than convivial interaction through shared work and learning. Revaluation of large amount of unpaid work and redistribution of unattractive work would change the relation between public and private space. This leads to conclusions on two scales: The relation of harbour as large production area, open spaces oriented on agriculture and living areas has to be changed. Bounda-

ries have to become porous in order to allow more local production and smaller economical circles. Except on regional scale this process has to happen on district scale. At the moment economic activities are placed on the boundary between the public and private space, on the outer edge of the housing block usually. Introduction of new care related facilities, communalizing the work and re-valuing local economy as well as urban production of food will break this boundary. Drawing the image of the radically sustainable neighbourhood is about presenting cooperation and localisation on the most immediate scale.

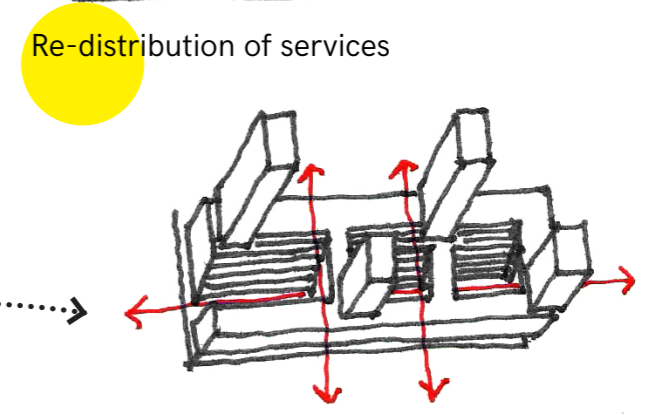
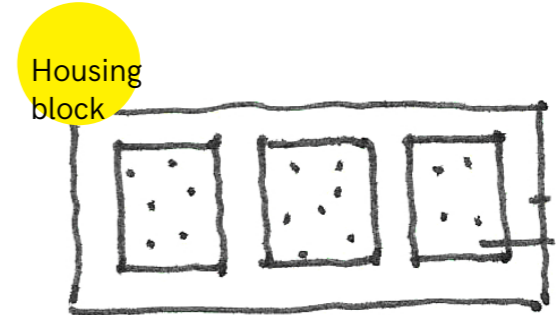
(c)Method: This implications can be tested on two scales the region and the district. The medium for both of them is mapping. However data source in case of regional scale is online available datasets for GIS software and reading of different planning documents. Based on this tracing is done that lead to conclusions on this scale. On the district scale the mapping is done based on participation in Stad in de Maak projects and interviews. The experimental economy that is practised in area of Rotterdam Noord gives a good ground for rethinking the boundary between private and public.

(d)Outcome: Both of the scales are presented on level of conceptual scale to indicate how the principle works on the large scale and in relation with following inputs. However the point of redistribution of activities is work out more in detail

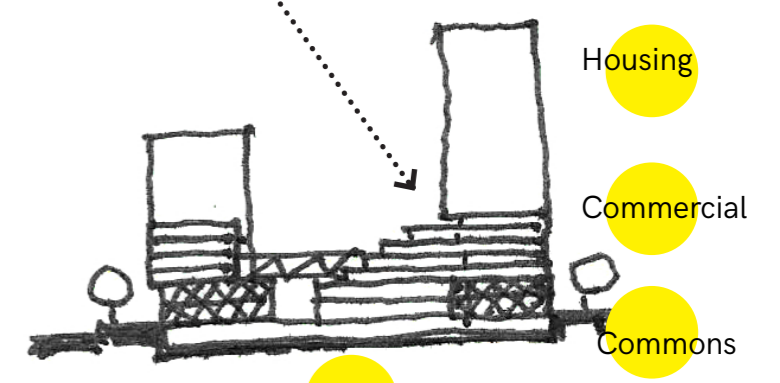
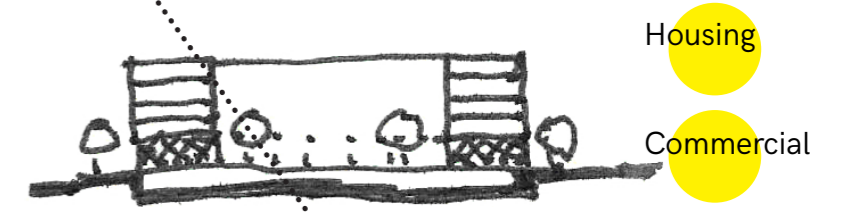
proposal for new housing in different urban areas. The setting of the new economy based on the values of De-growth is elaborated in set of actions that help the final users obtain inspiration from the large scale principles.



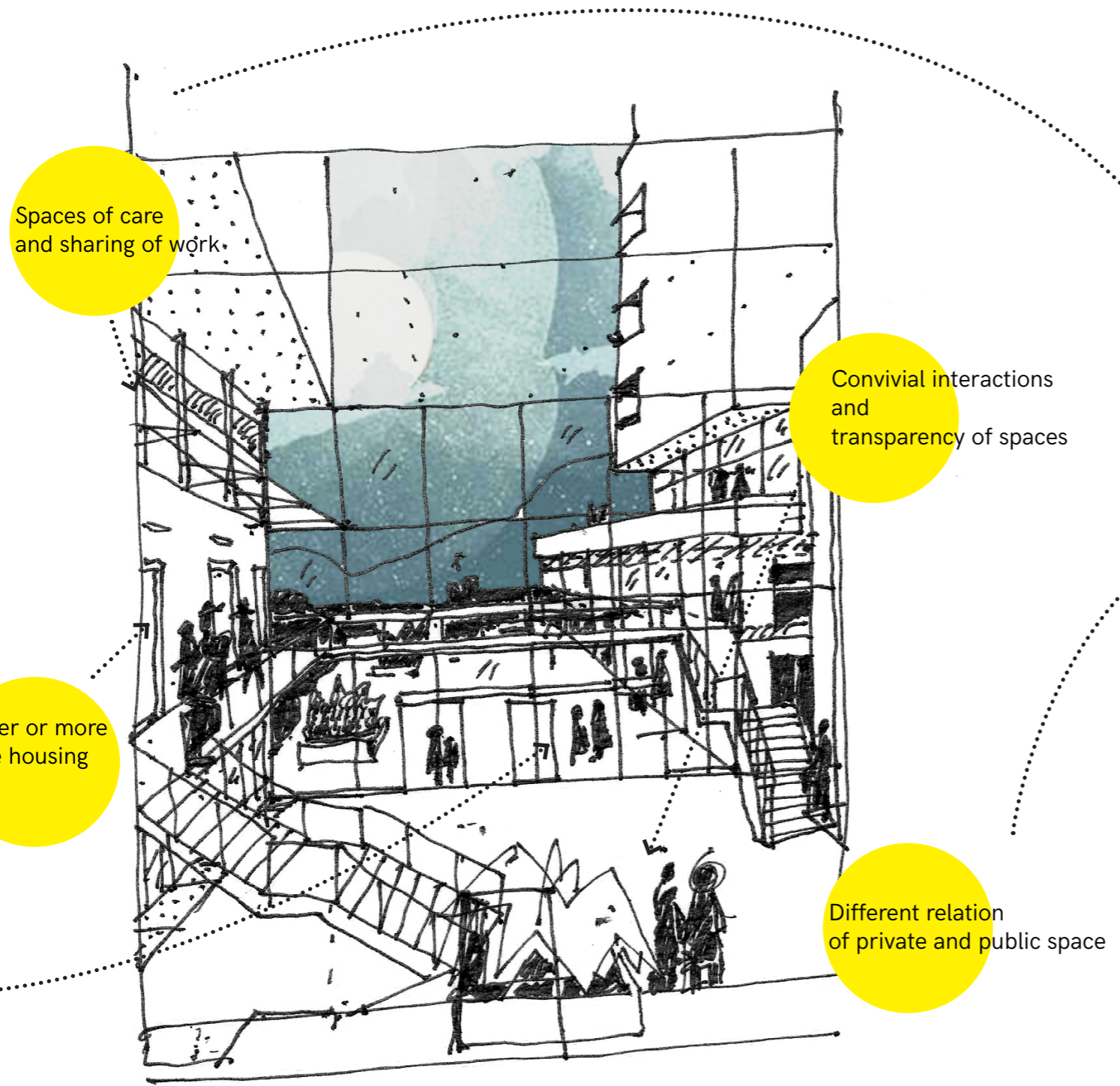
[fig. 22] Rem Kolhaas-Exodus
source: [online]Google images



Spaces?



Economy of care



Conceptions

5.2.2. Density-Re-scaling

(a)Relevance:

How to combine living and working in existing urban form?

The core concept of distribution of goods in society would become Commons. Neither public, neither private concept of economic engagement would need a new type of connections and a lot of localized networking. This is a field to rethink the whole scale of neighbourhood. Reduction of use of resources and processes of re-convivialization of tools would intensify social relations in the neighbourhood. If the city needs to control its ecological footprint that means that it has to stop grow through sprawl which then implies densification. Taking in consideration that population of Rotterdam will grow in the future this means new types of housing. Number of activities would actually merge and have need to be closer to each other. The city would become more condensed and there would be a demand for a different typologies. This applies especially on harbour which has a lot of potential for transformation.

(b)Purpose:

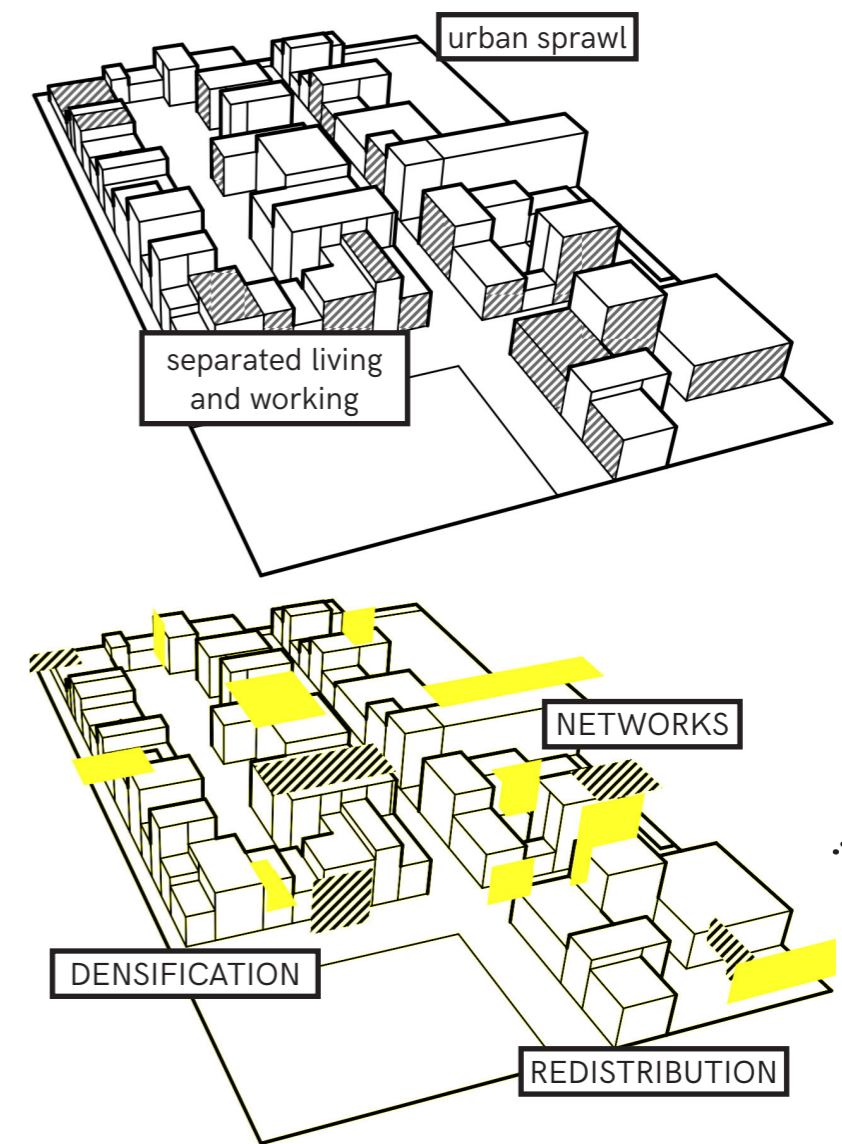
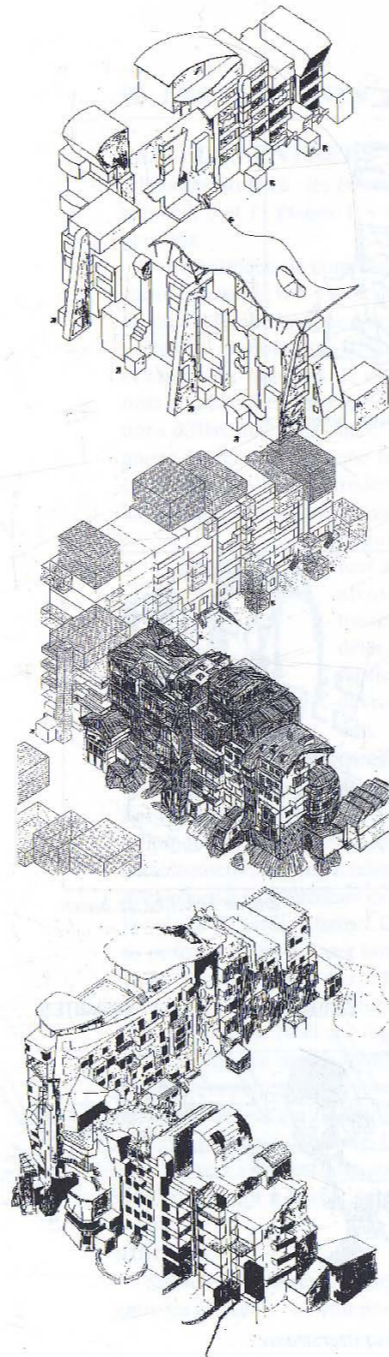
(District scale) To show transformation from monocentric to policentric city.

In order to make circles of economy smaller and reduce the ecological footprint of the city all areas of the cities have to be densified. Also the changing patterns of economy and orientation on self-or-

ganization of the local life implies the shift from monocentric to policentric city on various scales.

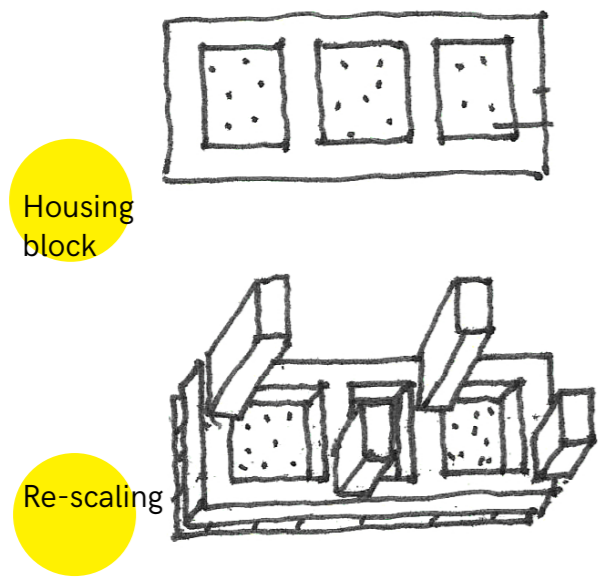
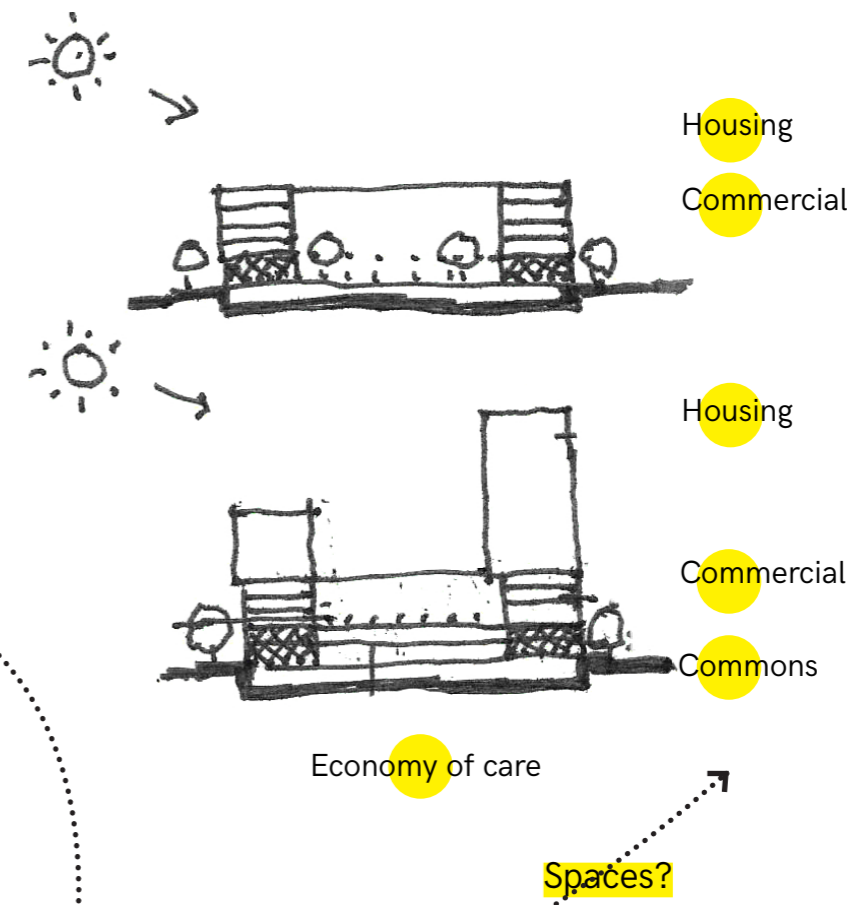
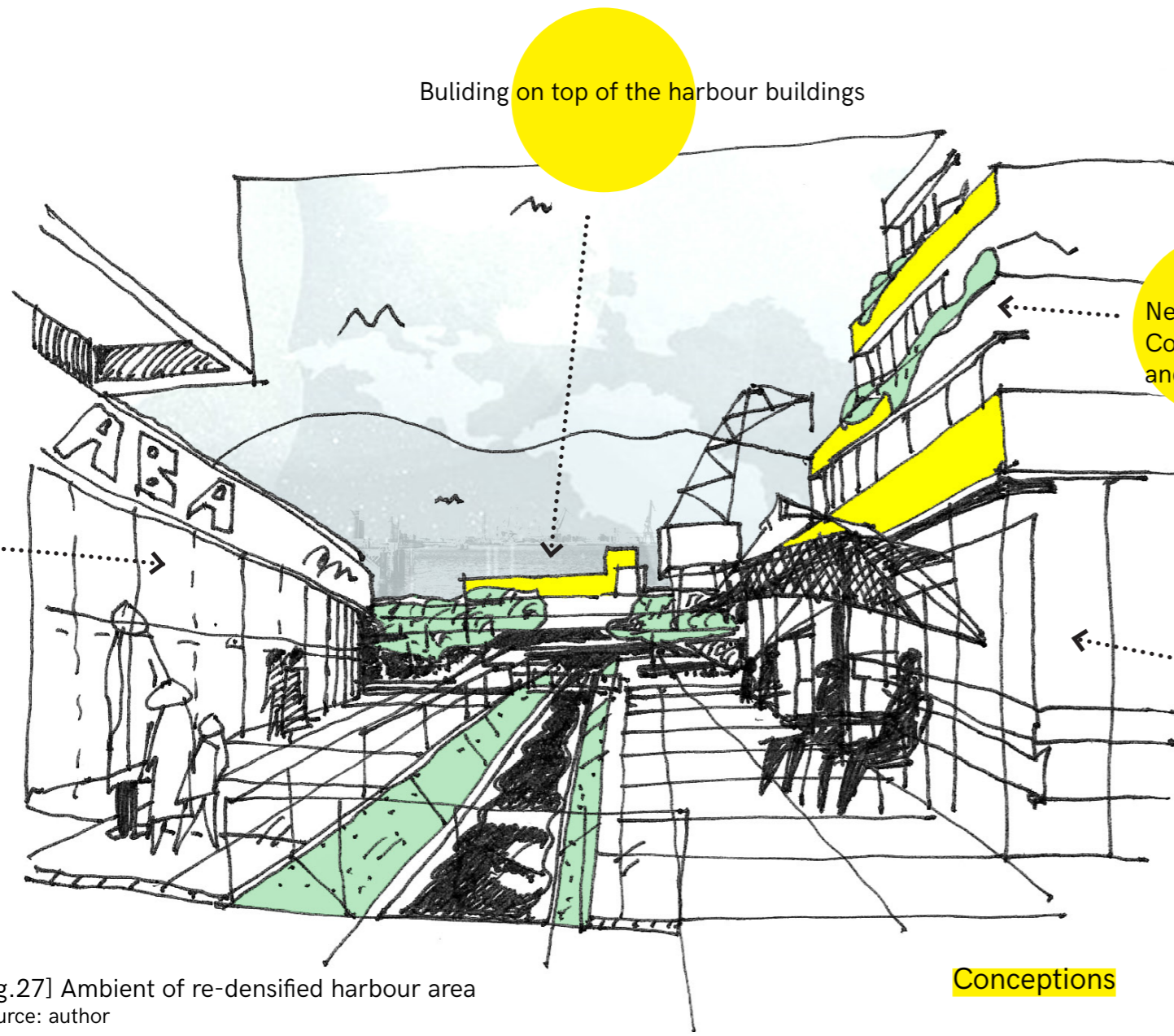
(c)Method: This is done on the scale of the district. By combining the prediction that Rotterdam will have more inhabitants in coming years with implications from the first input (ch. 8.2.1.) it is needed to think of new more dense housing that combines spaces for care, work and life. The densification should take place in a way that it supports the aim of decentralization of the city into policentric network of districts. By looking into available data and analysing the existing elements of the city the inputs for restructuring the urban fabric are made. While going deeper into design the method is inspired by study of examples from the literature that is related. From examples of experimental theoretical work (Future city (Brayer, 2007)) and transformation of industrial spaces (City as a Loft (Baum, Christiaanse, 2012)) to particular projects like Kolhaas' Exodus. In this sphere the method looks for new typology.

(d)Outcome: This input needs to be elaborated in more detail. Except being shown on the conceptual level of larger scale different urban areas are taken to apply the model for new housing. This is shown in strip of design and as model for new living.



Principles

[fig.23] Lucien Kroll-housing
source: [online]Google images



5.2.3. Public space - Revaluating commoning

(a)Relevance:

What is the role of public space in process of commoning?

Since big part of life would happen in community and commons would take a new role in socialization and democratization of social relation there would be less need for the plain public space that does not have function. That means that it can be turned into green areas for recreation and ecological renewing of the urban landscapes.

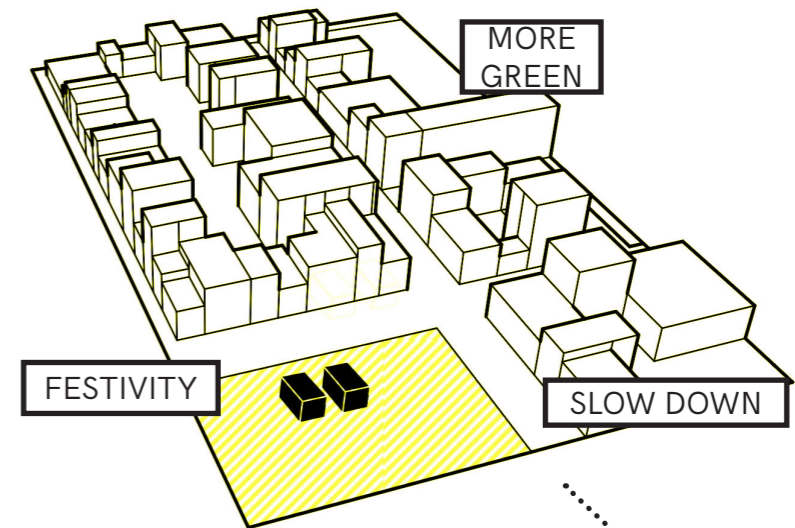
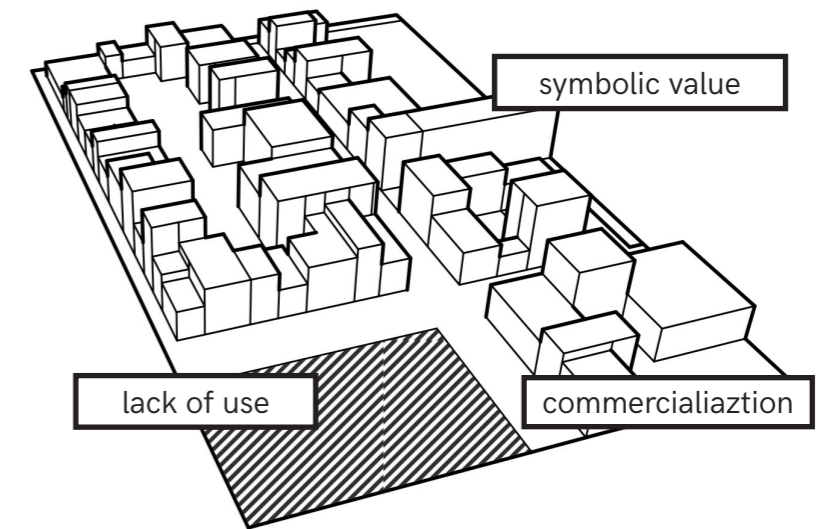
(b)Purpose:

(City scale) To reset the role of the city in the natural systems and to rethink the importance of open spaces in and around the city.

With the guess that the public life of the citizen will happen mostly in closed space or in communally defined open space the question rises what is the role of public space in the city? From symbolic realm of availability public space should shift towards utilization for new ecological infrastructure and communal activities that happen on larger scale that can not be self-managed. Reintroduction of nature as a biological system back into the city might be one solution. Or to dedicate it to festivity similarly like Indian cities did and still do until these days. To let the wilderness become a part of urban landscapes.

(c)Method: The analysis of exiting public spaces is made by tracing the map on the city scale. Based on other spatial inputs the reaction is built based on surrounding and function of the particular public space in the area. Structural analysis of public space is used to support the conceptual level of project.

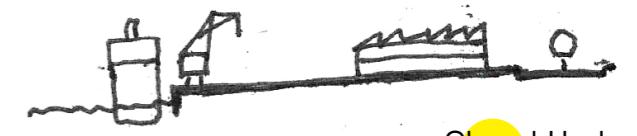
(d)Outcome: The transformation of public space is presented on the conceptual level as the principle that can be research more in detail through further analysis and design.



Principles

[fig.24] Diller, Scofidio-Highline-New York
source: [online]Google images

Introducing nature in the city



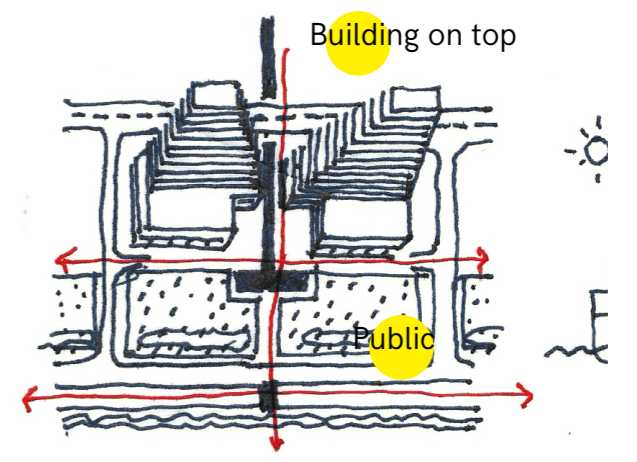
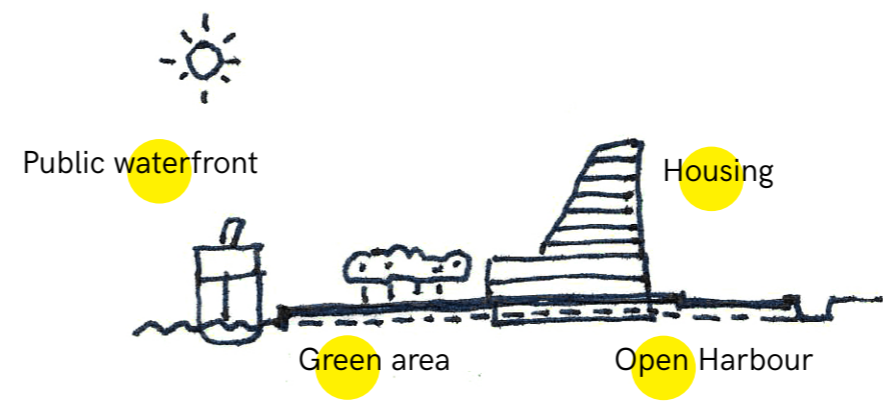
Closed Harbour

Conceptions

River as most common public good

Spaces?

Depense- slowing down the street scape



5.2.4. Infrastructure - Restructuring traffic (& food supply)

(a)Relevance:

How to use intentional limits of traffic(infrastructure) to open space for local food production and distribution?

The city consists of large structures. One of the most spatially and energy wise demanding structures in the city at the moment is traffic infrastructure. In the De-growth scenario this physical structure can be reduced to the minimum, even through forced measures. Amount of the space gained by this can be redirected to different function like paideia, food growing, reducing ecological footprint etc. It can be used for a completely new infrastructure that can be build on the place of the traffic infrastructure. Like agricultural system for the new city or local production of energy.

(b)Purpose:

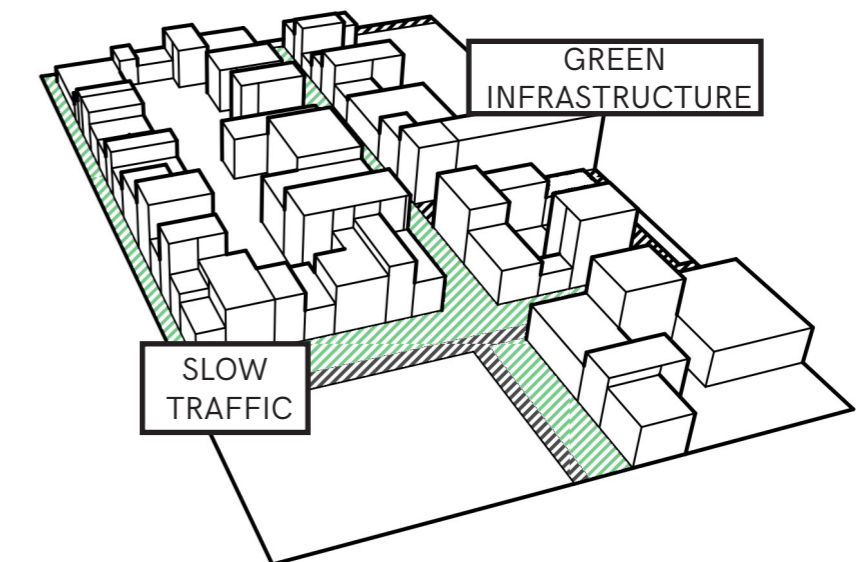
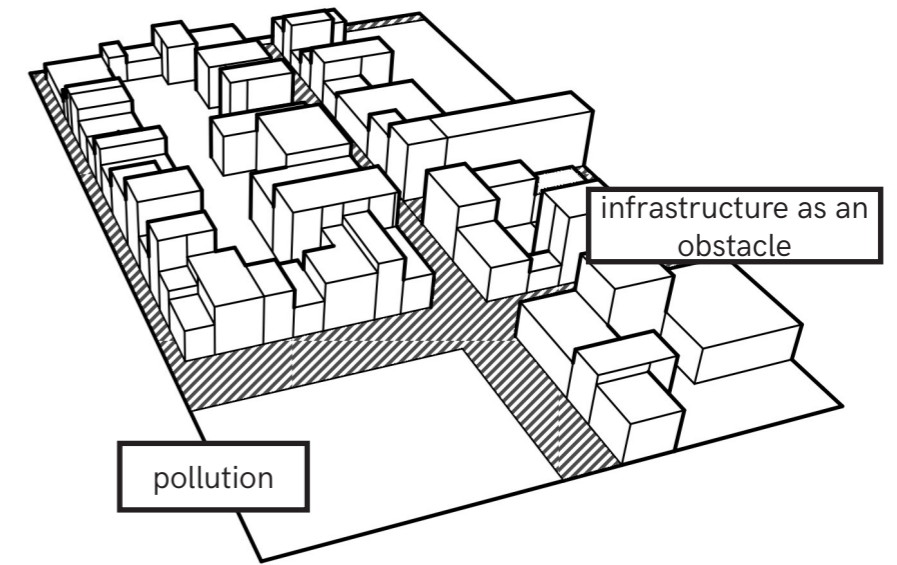
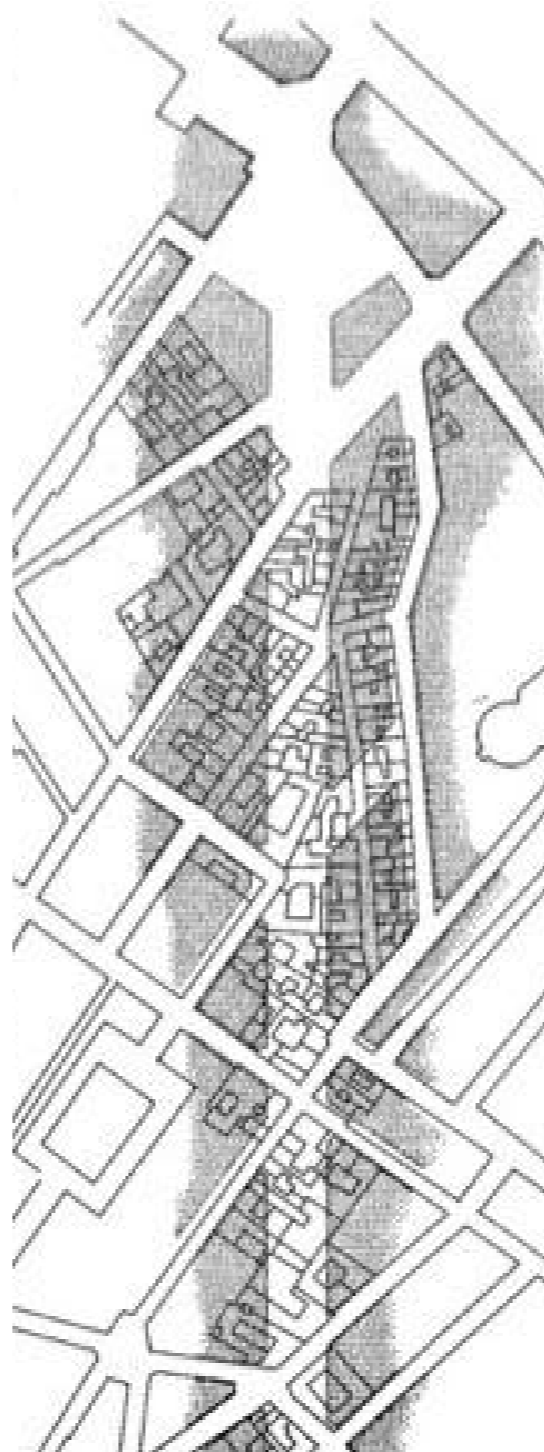
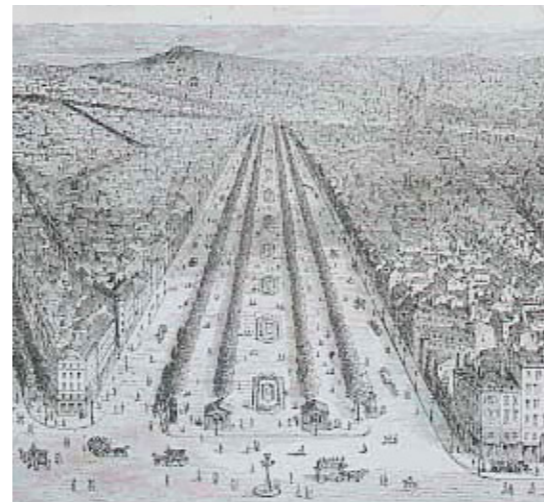
(City scale) To rethink infrastructure in the slower city

The traffic infrastructure should be restructured in De-growth oriented city. It is a good example of the system on which limits can be applied for the not only environmental benefits but also societal. Slowing down of life in the city would influence restlessness of its citizens and if that means removing some lanes from urban motorways, why not? The transformation from large traffic infrastructure to slow traffic would open space local food production and distribution. In this sense limiting the systems that

we are used to can be positive and it proof that De-growth is not about negative growth but collective effort of focusing on different directions of development.

(c)Method: The scale on which presentation of this principle would give most interesting results is the scale of the city. The reasoning for this is inspired by the Haussmann's boulevard where implementation of new urban element changed the direction of city's development. In this case towards growth and more traffic. For transformation of the Rotterdam's future towards De-growth the opposite intention has to be materialized while limiting the existing traffic and substituting it with new function that would revolve around food production. To find way how, the project looked in number of studies on urban food production in Rotterdam (Mapping urban agriculture potential (Dumitrescu 2013), Room for Urban agriculture in Rotterdam (Eetbaar Rotterdam, 2012),). Finally Haussmann's plan for Paris is used as inspiration for insisting on implementation of this input base on Kallis's suggestion of 'self-limitation'.

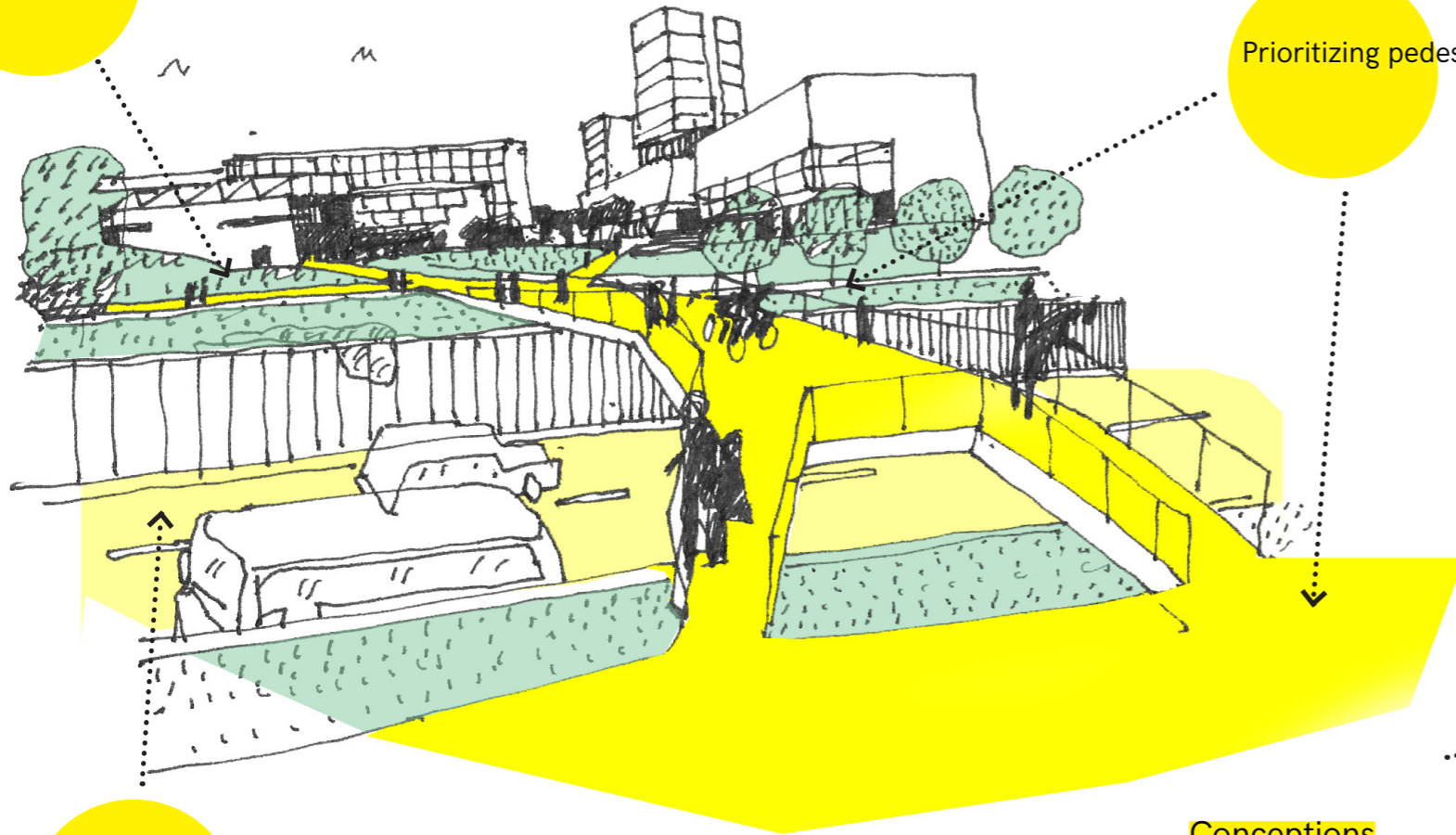
(d)Outcome: This implication is presented on the conceptual regional plan for the city as illustration of the principle under which this aspect of future urbanity should be thought.



Principles

[fig.25] Haussmann - Paris Boulevard
source: [online]Google images

New infrastructure for local food supply

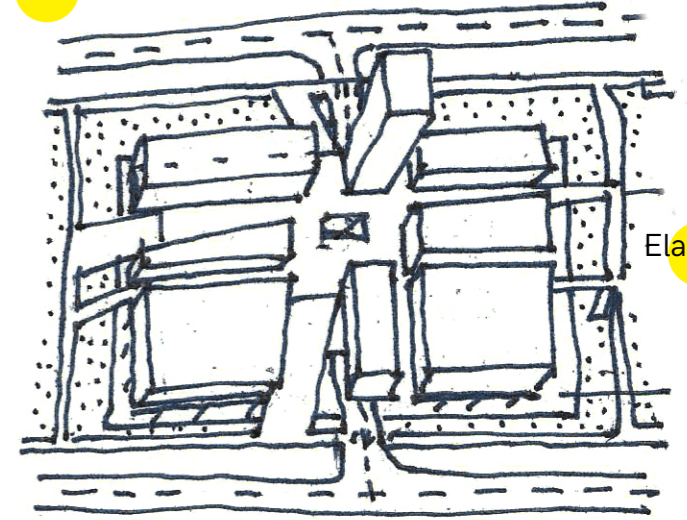


Prioritizing pedestrian traffic

Limiting the urban traffic

Conceptions

Peripheral traffic

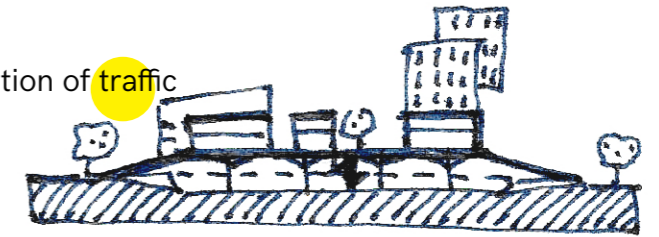


Bycicle highways

Elavated streets

Spaces?

Separation of traffic



5.2.5. Energy - Re-thinking Local production

(a)Relevance:

How to produce locally?

Using energy efficiently is not a solution of limiting the growth. Energy has to be used in the way that it is not taken out of ecological systems but using of it becomes part of the circle of ecological life. This goes same for energy and resources. Recycling and reuse are basic steps. So recycling gardens, sharing and reusing material facilities, recycling facilities, small water collection lakes, wind turbines and other energy plants would become standard equipment of neighbourhood. Question is the scale. Simplification and localization of life are some of the next steps in rethinking the using of our resources. That means that one's life would happen in certain radius of the city and he/she could get most of what they need there. This is main parameter for re-scaling things.

(b)Purpose:

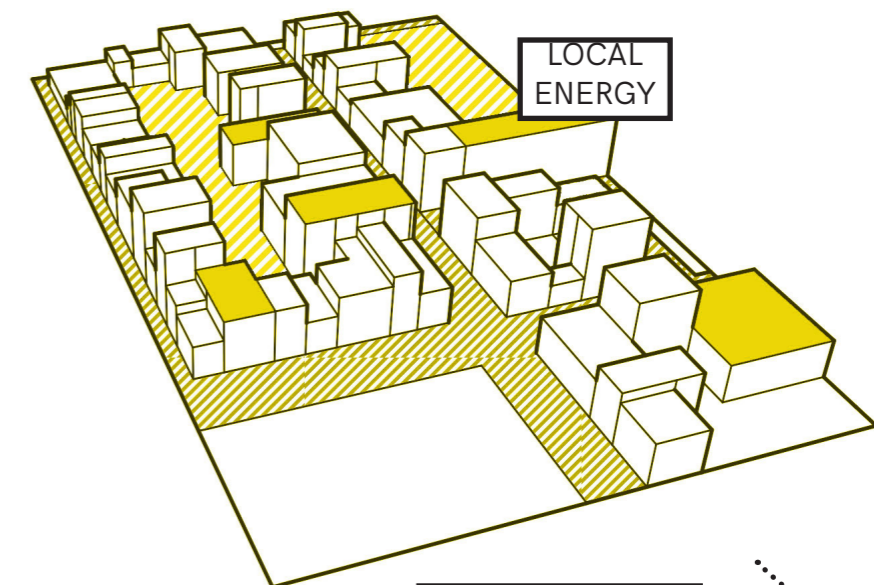
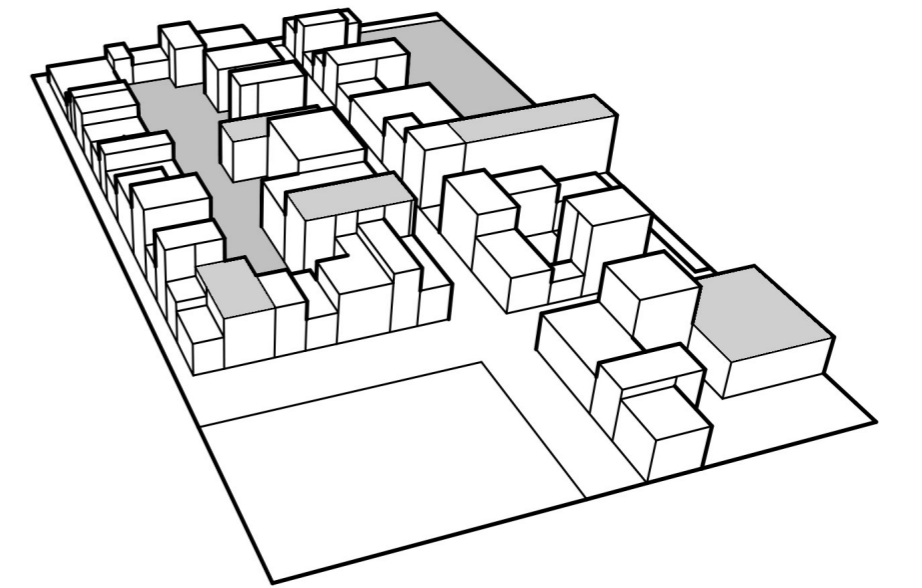
(Region scale) To make city independent in terms of energy and resources

Producing locally is fundamental for making less pressure on natural ecosystems. It is not about energy that can be produced on renewable sources but still in large centralized systems. It is more about taking the responsibility for the amounts of energy that we spend. In example 46% of energy produced by carbon in surrounding of city of

Rotterdam is not used because it is released in form of heat or carbon dioxide. Utilizing this energy for heating of home and greenhouses would mean to take more responsibility over cities capacity for production of energy.

(c)Method: Re-thinking energy production should occur in all scales but on the level of principle it can be shown through regional scale. Here production areas, their large surfaces and heat production facilities, play an important role. By studying publications Urban Metabolism Rotterdam(IABR, 2014) and Mapping urban agriculture potential (Dumitrescu 2013) recycling as a flow is better understood. With analysis through GIS software the ideas can be applied on the regional scale of the city.

(d)Outcome: The local production is a layer of conceptual regional plan for the city as illustration of the principle. Some details can be shown in other more details plans, but they would be just suggestions not structured guidelines.



ENERGY INFRASTRUCTURE

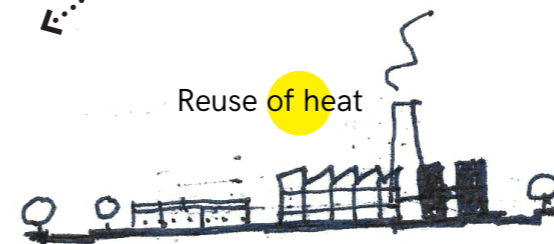
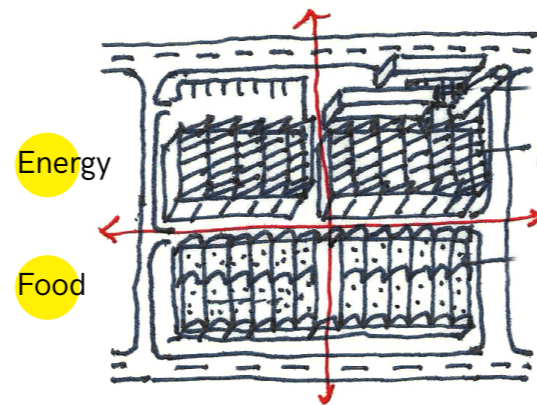
Principles

[fig.26] Organoponicos-urban gardens, Cuba
source: [online]Google images

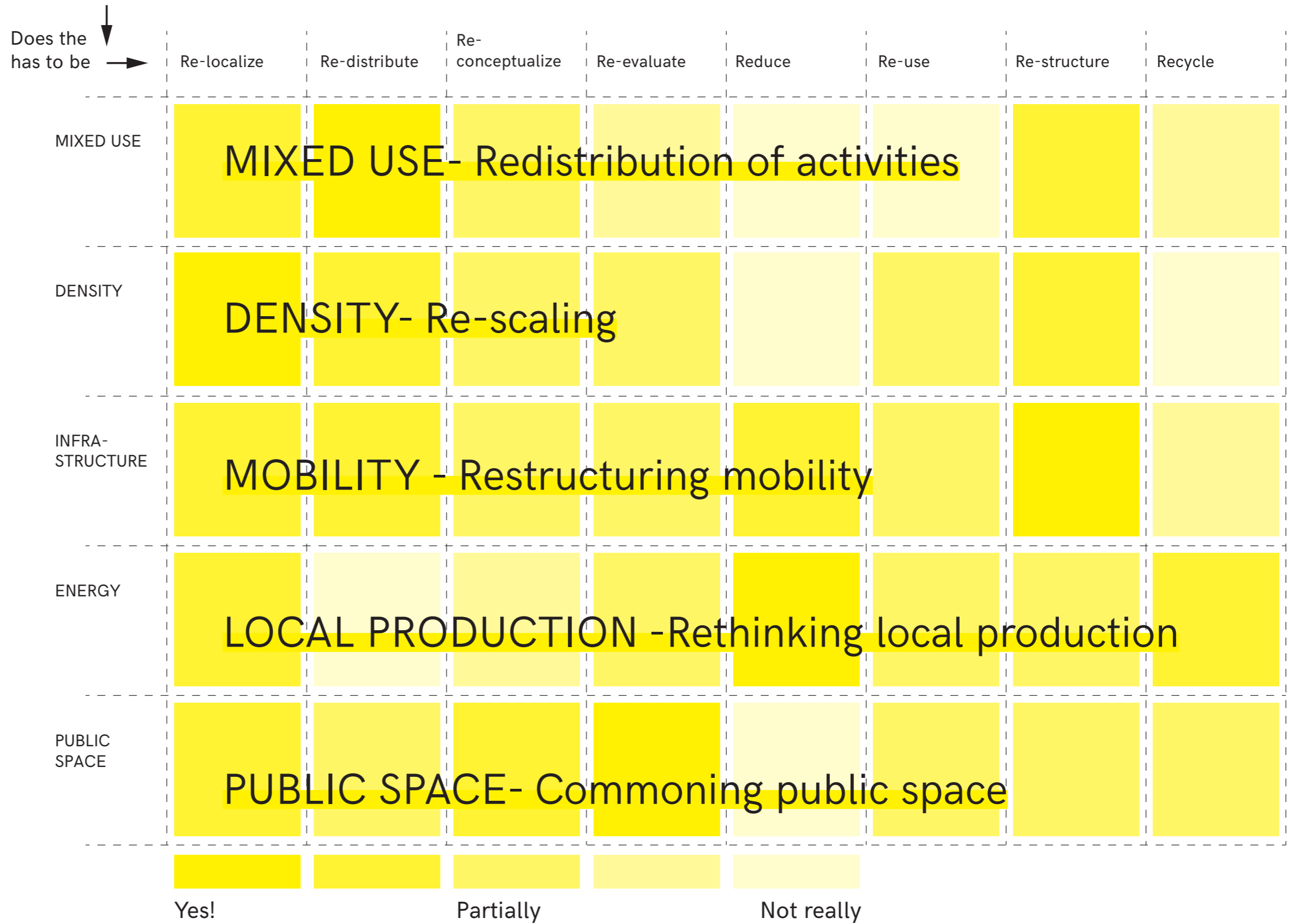


Conceptions

Spaces?



[fig.27] 5 spatial inputs of De-growth objectives
 source: author



[fig.28] Table of relevance purpose of re-
search conclusions

source: author

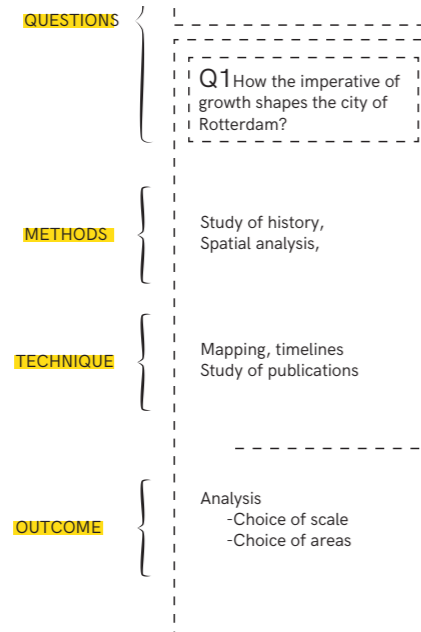
	Mixed use - redistribution of activities		Density - re-scaling	Commoning – reevaluate public space	Infrastructure– restructuring traffic & food supply	Energy - rethinking local production
relevance						
Research (sub)question	How to involve commoning and economy of care in urban fabric?		How to combine living and working in urban form?	What is the role of public space in process of commoning?	How to use intentional limits of traffic(infrastructure) to open space for local food production ad distribution?	How to produce energy locally?
purpose						
envisioned urban transformation	Show cohesion between city, harbour and open spaces	To provide guidelines for redistribution of activities in neighborhood	To make the circles of the economy smaller and limit the ecological footprint of the city	To rethink the importance of open spaces in and around the city.	To rethink infrastructure in the slower city	To make city independent in terms of energy
	From city of globalism to city of localism	From city of consumption to city of conviviality	From monocentric to policentric city on various scales	From symbolic public space to utilizing it for new ecological infrastructure	From large traffic infrastructure to slow traffic and local food production and distribution	From centralized energy production to local energy production
method						
scale,	Region	District	District	City	City	Region
medium,	mapping, GIS data anlysis, tracing	mapping, participation, interview	mapping, data analysis, example studies	Mapping, structural analysis	GIS, mapping	GIS, mapping
references	Urban Metabolism Rotterdam (2014), Rotterdam Stadsvisie 2030, Port vision 2030 etc.	Stad in de Maak, collaborative practices, Tedy Cruz	Future City-book, City as Loft, Exodus-Rem Koolhas, Dogma, Lacaton & Vassal	Future City-book, City as Loft,	Mapping urban agricutlure potential (2015), Room for Urban agriculture in Rotterdam, Hausmann's plan	Urban Metabolism Rotterdam (2014)

TEST CASE: ROTTERDAM

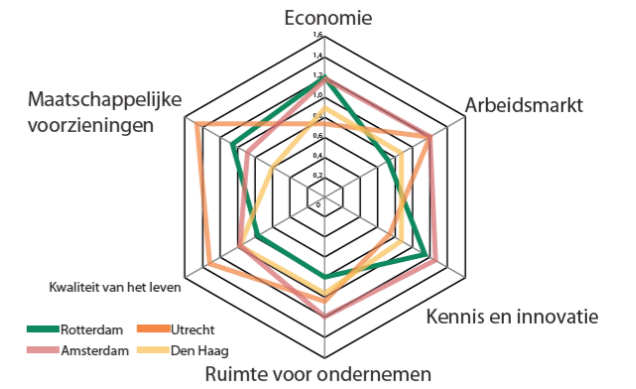




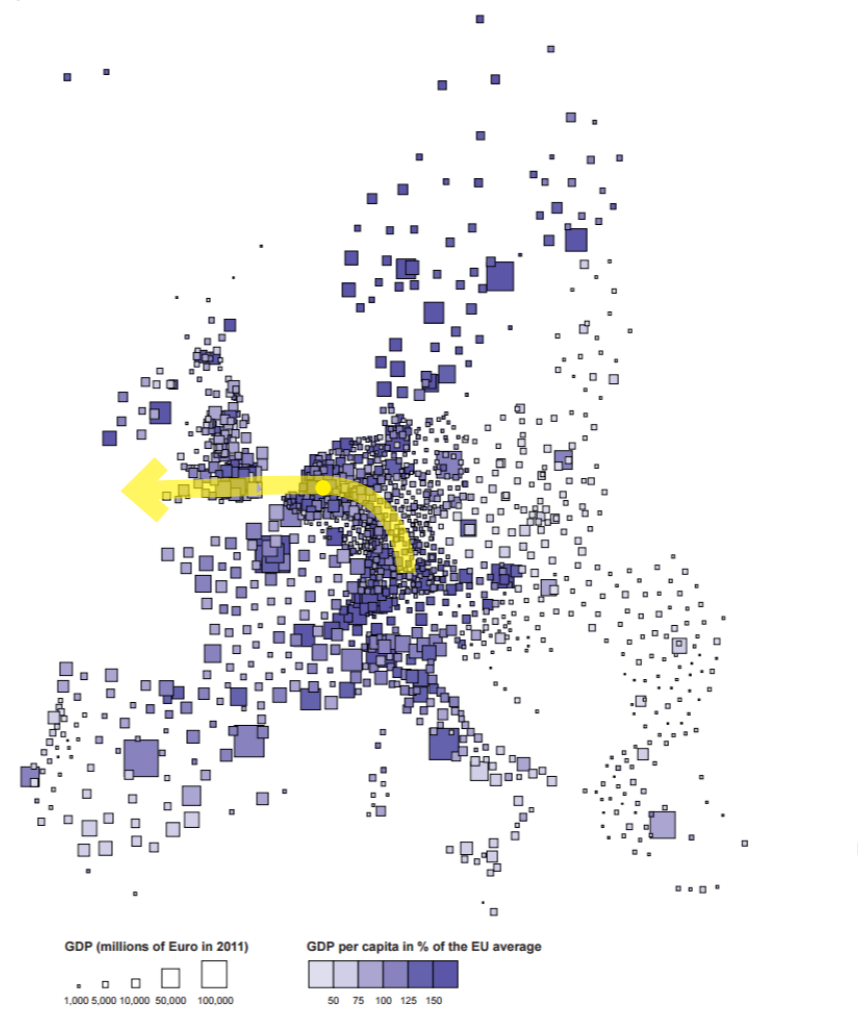
SUB-RESEARCH QUESTION



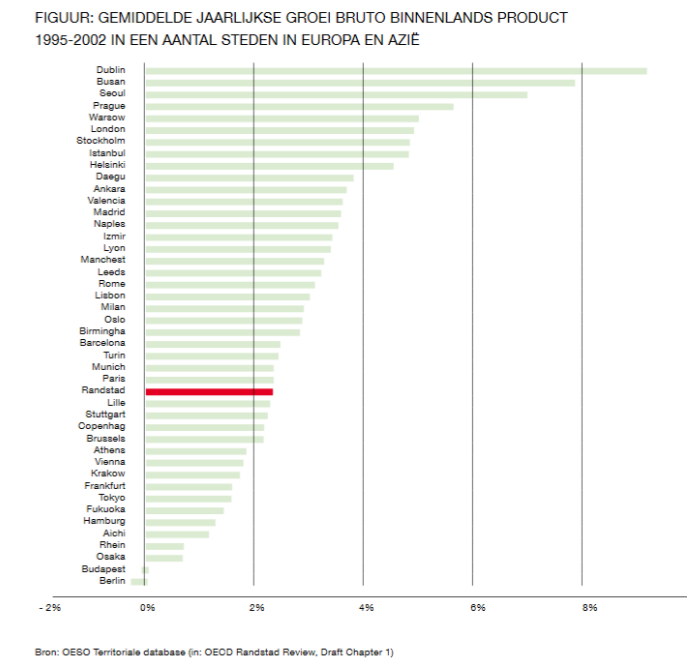
[fig.29]Rotterdam in Randstad, by author



[fig.30]Rotterdam in Randstad, cbs.nl



[fig.31]Rotterdam in Randstad, www.CityMetric.com



[fig.32]Rotterdam in Randstad, cbs.nl

6. Test case

6.1. Location analysis - Rotterdam

Rotterdam is situated in the western part of Randstad, the richest area of Netherlands. It is placed between the Green Heart of Netherlands and estuary of river Maas. River Maas, sea and infrastructure that connects it the most rich parts of Europe with the world are reason why Rotterdam is one of the largest ports of the world (between 5th and 10th) and largest in Europe. For this reason the city is called the Europe's gateway to the world. City itself has around 700 000 inhabitants that live in 14 districts.

i. Position in global growth

As already stated, city of Rotterdam is part of the Randstad area. It is one of the most developed conurbation areas in Europe. It is often not appearing on lists of richest metropolitan areas of the world due to big number Asian and African cities that are growing with immense rate.

However if we look at the map of the richest Europe cities and regions we will see that city of Rotterdam is position on the north end of the economically vibrant arc that stretches through centre of the continent. Knowing that Alps are closing it's southern end and that ship transport is still one of the most common modes of transport of all goods we can conclude that Rotterdam and Randstad will keep their role in the global economy. (Port of Rotterdam, 2007) This is

further supported by the fact that it is among 10 biggest harbours and in close distance is Schiphol, 8th largest airport in the world.

Main cities are Amsterdam, Rotterdam, Utrecht and Den Haag. Comparing these cities in terms of orientation on economy, quality of life, labour market, diversity, knowledge and innovation and civic amenities we can see Rotterdam's position within the Randstad. We can see that it competes with Amsterdam in orientation on economy and leading in innovation while not taking its part in labour market and having remarkably low quality of life. Reasons for this we can seek in fact that for a long period of time it was one of the poorest municipalities in terms of income per household and only after golden age of Dutch economy in nineties it started its transition towards more diverse forms of business and production (ie. Creative industries, financial businesses).

Already here it is noticeable that main role in positioning city among the global most developed cities had the harbour and its economical growth. The size of it indicates that all surplus that this race brought to the city was further invested in more growth.

ii. History

Each phase in long history of the world economy raises specific questions about the particular conditions that make it possible.

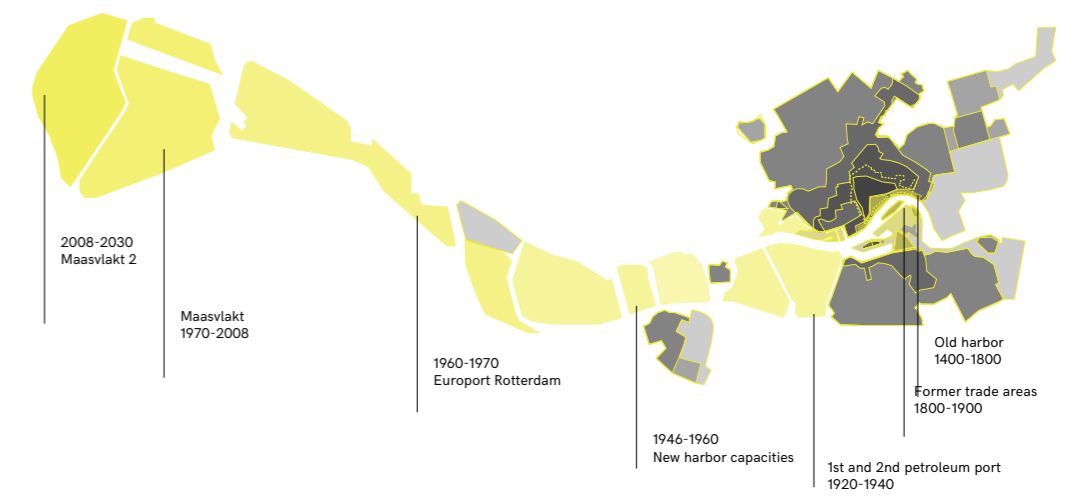
(Sassen, 2005)

The same thing could be said for the economy of the city. In order to research the influence of growth imperative on the urban structure, population and quality of life in different periods it is necessary to look into history of the city. Here I decided to focus on specific relation between the physical growth of the city and growth of harbour. Next to it I tried to trace the changes in population. By this method I wanted to see how investment of surplus into harbour capacities effected the living areas of the city.

Harbour was originally on the north bank of the Maas where today's city main urban waterfront is. It grew first on the other river bank where the last harbour capacities worked until 1980's. New capacities for development were built towards the east. First growing of harbour occurred in early 20th century with petroleum port. At that time living areas of the city grew significantly around historical center and towards south. We can say that prosperous period of the modern history of the city starts with this widening of the harbour. It continues until 1940 when one of the most significant events in history changes course of development. Rotterdam was bombed on the beginning of the 2 World War. Rebuilding of the city marked the stagnation in terms of urban growth and part of the surplus of the harbour was directed in rebuilding the modern centre.

During this period old harbours are transformed into smaller recreational harbours. Until the 1970ies Rotterdam harbour continues to grow into one of the largest ports of the world. In 1962 it is officially the largest port in the world. At that time Rotterdam starts to have its contemporary size. However it is also period in which structure of population started to change. More migrant labour moved in and first effects of uneven development occurred. At that point large renewal projects start to change the living areas of the city. City is mostly a city of workers and poor people and one of the most dangerous cities in Europe.

Towards 2000s the harbour develops large areas on the far west of the city. Golden age of Dutch economy enables improvements in living standards. Special feature of this period were transformation of former harbour areas into representative living areas.

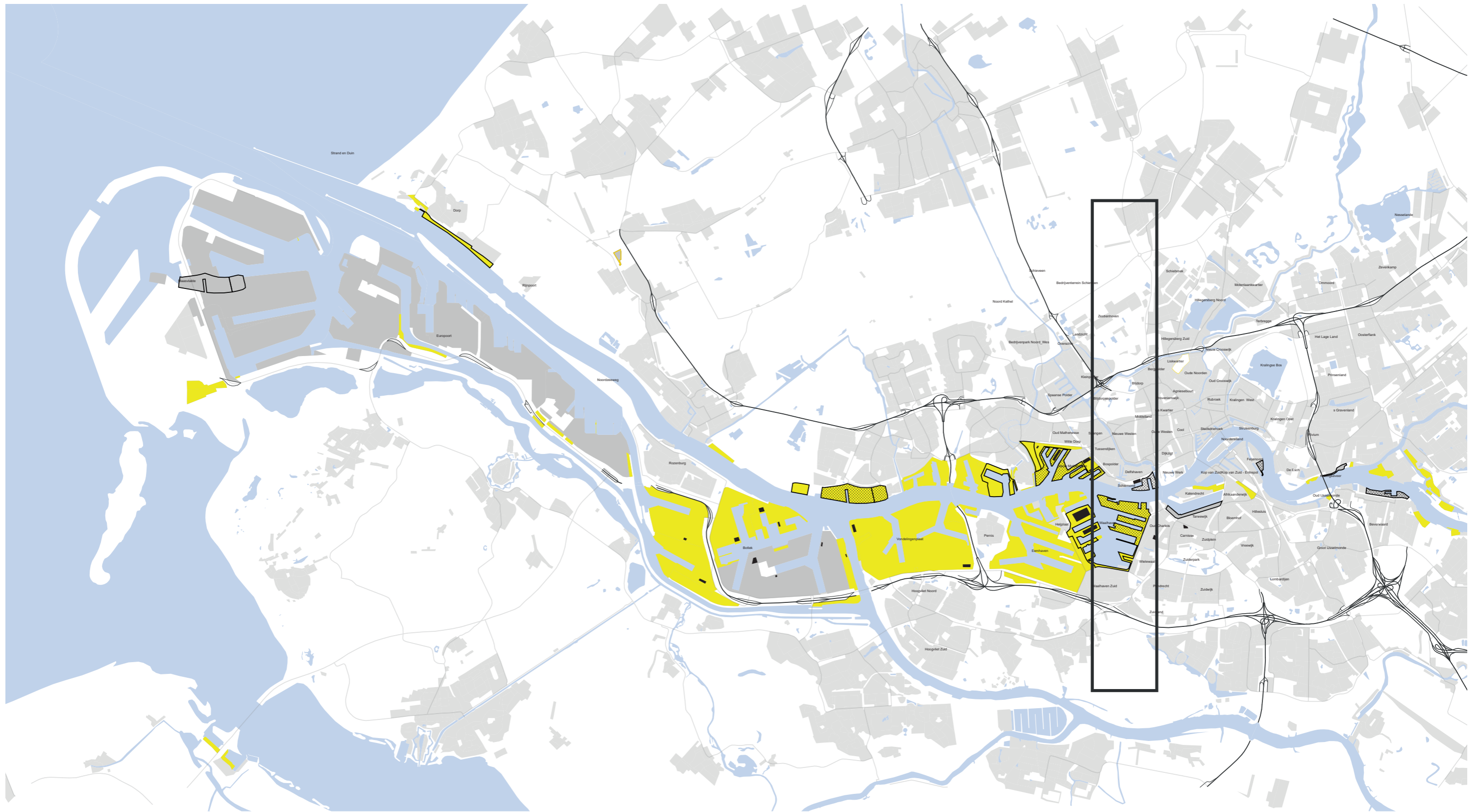


[fig.33] Comparison of harbour's and city growth
source: <http://www.mappinghistory.nl/projects/>



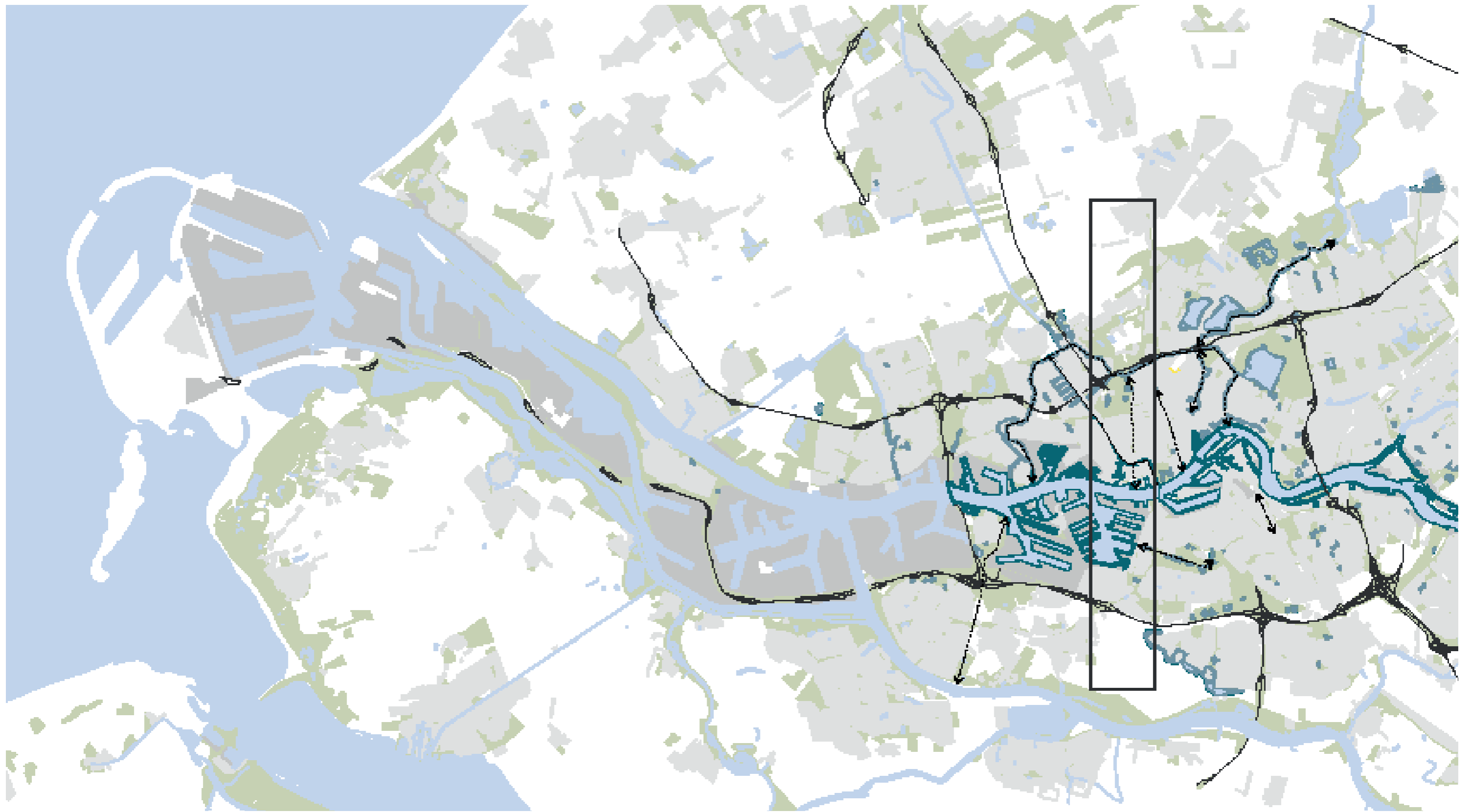
[fig.34] Port city safari
source: Port City Safari, Stealth. Unlimited, 2007





- HARBOUR IN TRANSFORMATION
- POTENTIALLY OPEN FOR CITY
- POTENTIAL FACILITIES FOR NEW SUSTAINABILITY

[fig. 34] Map of harbour as potential for the De-growth source: author



- WATERFRONT OF THE CITY
- > CONTACT OF CITY AND RIVER
- URBAN GREEN

[fig.35] Map of green spaces and city's connection to the river
source: author

6.2. Seven urban types

Following research paper *Surveying density, urban characteristics, and development capacity of station areas in the Delta Metropolis* (C C Kickert, M Berghauer Pont, M Nefs, 2014) seven general urban types are taken for sampling the indicators in context of city of Rotterdam. Each of these 7 types have specific characteristic considering mixture of activities, diversity of housing and user groups in public space, presence and volume of motorized traffic etc. Mapping these types revealed that Rotterdam has hierarchically organized relation between centres and peripheries. [fig.37.] Industrial revolution and modernist lust for efficiency of city as partaker in capitalist production machine affirmed functional zoning as basic division of the urban areas for more than a century. It can't stay unnoticed that there is close relation between expansions of harbour and Rotterdam's pride-strong top-down planing with primary concern to house harbour's labour power. This produced hierarchically organized mono-functional spaces of the city that are design to fulfil certain purpose, from housing to production and storage of surplus.

Table 5. Final classification into seven neighborhood types.

Neighborhood type	Description	Visualization
Urban core	Largely closed-perimeter building blocks with dense historical construction averaging two to four floors. Streets and public spaces are relatively small in size leading to very high ground coverage by buildings. The urban core sometimes has more recent infill construction such as inner-city shopping malls and urban renewal projects. The urban core usually accommodates public functions such as retail and smaller civic structures.	
Compact city	Largely closed-perimeter building blocks, dense construction averaging two to four floors. Partly single-family homes, partly apartment buildings, sometimes mixed with small-scale retail. The residences are usually built in the 19th or early 20th century, but more recent construction with the same urban form is possible. Streets and public spaces are relatively small in size leading to a large percentage of the land area being built upon. Sometimes more recent urban renewal projects exist in these neighborhoods.	
Suburban terraces	A combination of closed and semiopen building blocks or strips of mostly residential buildings. The most important characteristic of this neighborhood type is the abundance of attached single-family homes of two to three floors in height. These homes may be built from the 19th century until recent decades with interestingly little variance in density. This neighborhood type has more open space than the compact city, both public and private, leading to a lower ground coverage by buildings and a lower density.	
Rural detached	Detached construction of one to three floors on average, either built as historical rural ribbons or villa-park developments. This neighborhood type can originate from any era. Streets and public spaces as well as private gardens and agricultural land are very large in size. This results in low densities and low land coverage. While agricultural uses can be found in this neighborhood type, most buildings serve as dwellings.	
Park city	Broad open building blocks with mid-rise to high-rise residential construction in a park-like setting, sometimes mixed with a smaller amount of low-rise single-family homes. Constructed from the postwar decades onwards. The number of floors varies greatly but the average starts at about four. Because of the diffuse construction on large green plots the ground coverage is low, but because of the high number of floors per building the total neighborhood floor-space index can still be relatively high. A low degree of functional mix.	
Generic city	Recently constructed high-rise buildings, usually in central business district locations. Completely redeveloped city centers are also classified as generic. This neighborhood type usually houses offices and public buildings in a high density but with a low to medium ground coverage. This results in a widely varying overall density, usually in the upper regions. The average floor count is relatively high.	
Business area	Office and industrial estates mainly consisting of buildings of one to two floors. Although more construction is relatively low it has a large scale, leading to large ground coverage with a relatively low overall density. This neighborhood type comprises industrial buildings and low-rise office buildings, high-rise office buildings belong in the generic city category.	

[fig.36] Description of 7 generic urban types
source: *Surveying density, urban characteristics, and development capacity of station areas in the Delta Metropolis* C C Kickert ie.

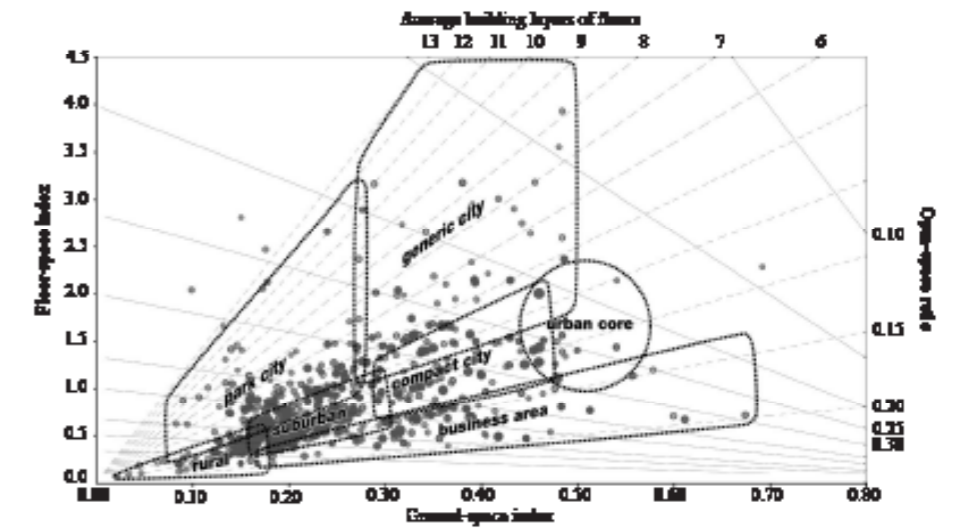
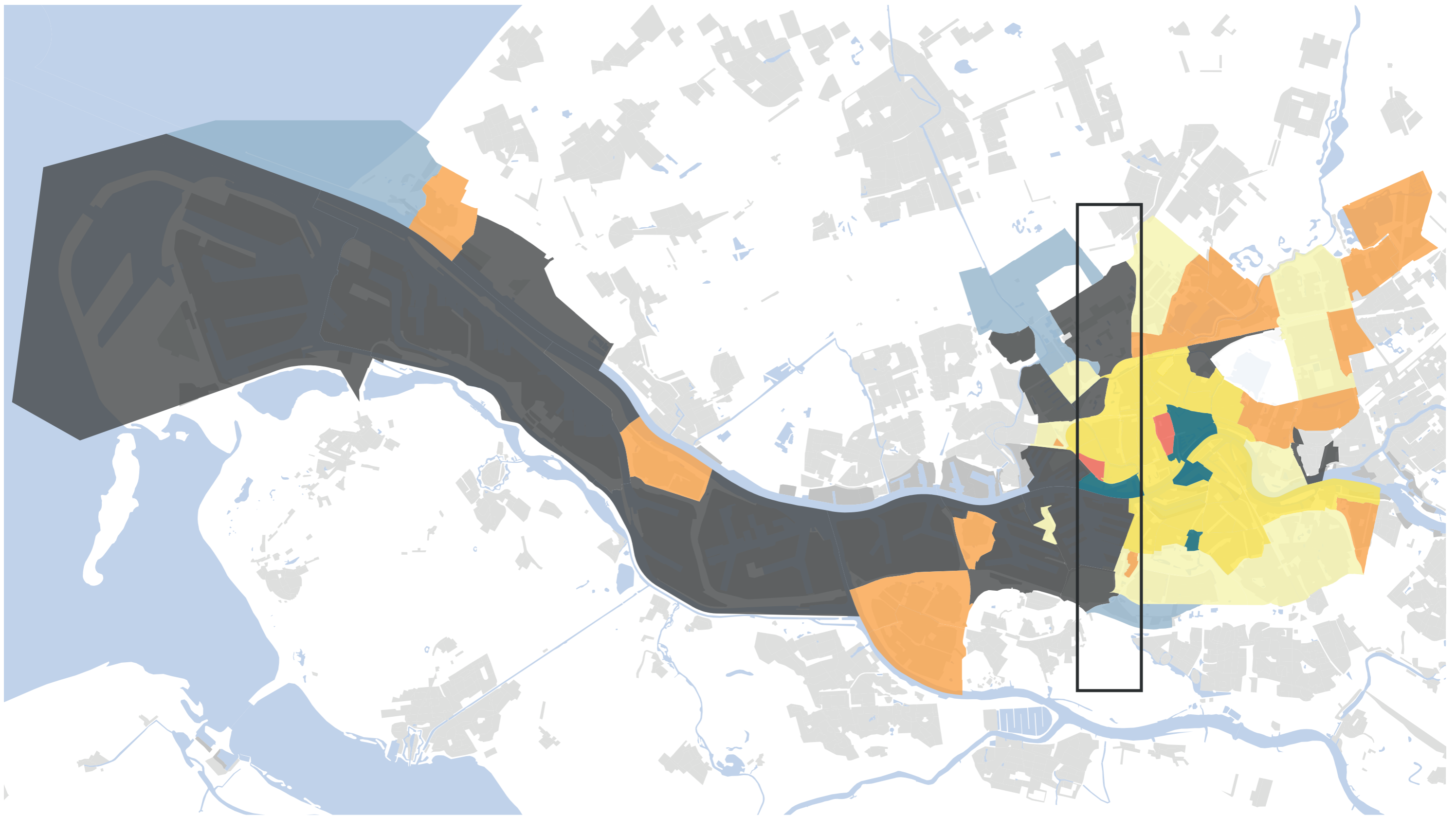


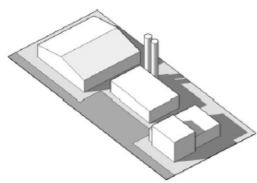
Figure 18. All seven character types show coherent green density values in the Spacestat© graph.

With the final set of neighborhood character codes in place, all neighborhoods were coded with their corresponding type. The calculation model is able to generate the 'top three' neighborhood characters within each station area, sorted by the acreage each character takes up within the station area. A range of these classifications has been communicated to public and private stakeholders in informal sessions before and after SprintCity game sessions. Their positive feedback reflects an improved recognition of station areas compared with the previous categorization in SprintCity based on statistical data.

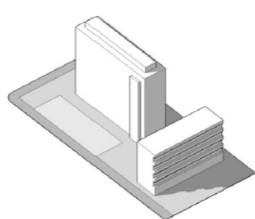
[fig.37] Map of 7 urban types of Rotterdam's fabric
source: author



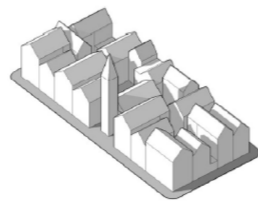
Business area



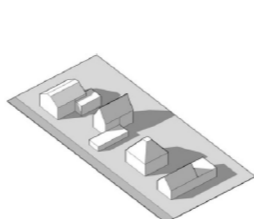
Park city



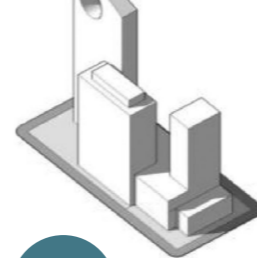
Urban core



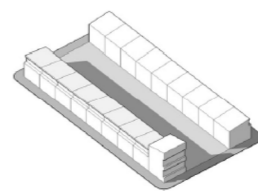
Detached rural area



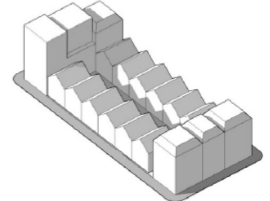
Generic city



Suburban terraces



Compact city



6.3. Quantitative analysis of seven urban types - Framing indicators

In following chapter samples of 7 types of Rotterdam urban fabric are tested in their capacity to acquire De-growth implications based on set of indicators. These include: job-care-freed time spaces balance, mixture of tenants, mixture of public space users, GSI, FSI, motorized traffic free streets, volume of traffic, unbuilt space and availability of waterfronts in the area.

This is done by first analysing existing characteristics of space then drawing design sketches on these sites. In example minimum 30% of private cars per household substituted by alternatives i.e. car sharing, subsidized lifestyle would be indicator of taking a De-growth course of development. Set of the indicators presented in the thesis is measurable but what makes it transferable is placing them into 7 generic urban types different historically, typomorphologically and functionally and testing them.

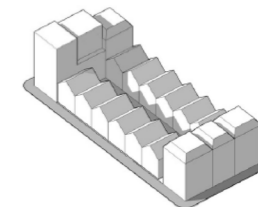
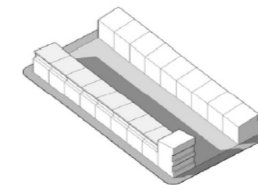
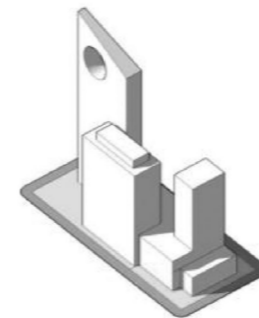
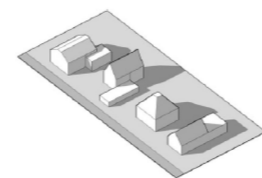
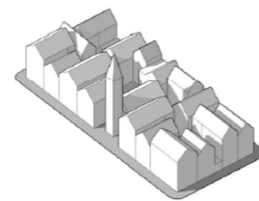
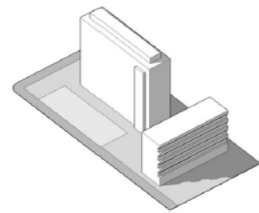
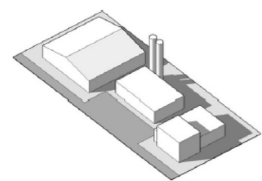
[fig.38] Map of waterfronts of the strip
source: author

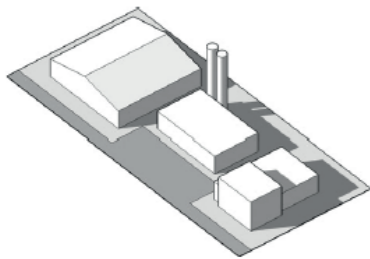
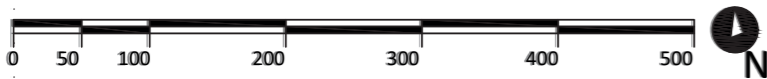
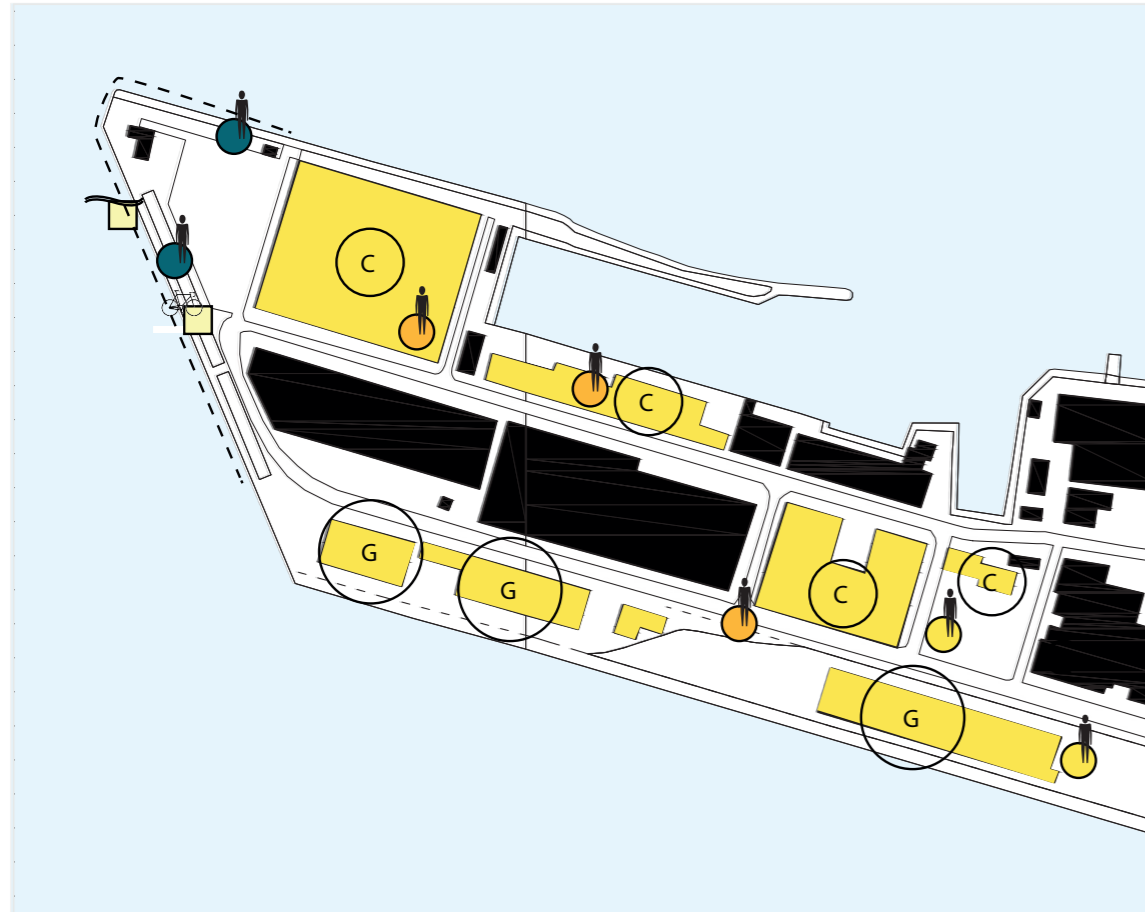
[fig.39] Map of open spaces of the strip
source: author

[fig.40] Map of 7 urban types of the strip
source: author

[fig.41] 7 locations chosen for analysis
source: author

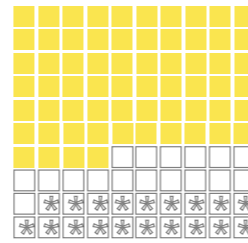






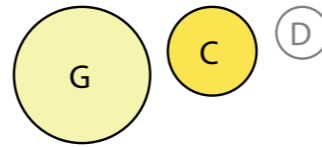
WAALHAVEN

Area: 0.42km²



FLOOR AREA OF:

JOB	38956 m ²
CARE	0 m ²
'FREED' TIME	0 m ²
EMPTY	11870 m ²



SCALE OF SERVICES:

Global (harbor, company headquarters, cargo transport)
City (Workshops, specialized shops)



TYPES OF USER GROUPS

- Harbor and company workers
- Workers and costumers of small enterprises
- Recreation and harbor freaks



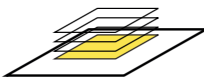
TYPES OF HOUSING

No housing in the area



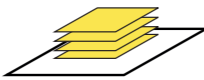
NUMBER OF RESIDENTS

No housing in the area 0/km²



GSI

min 0.11 - max 0.82
av.0.48



FSI

min 0.19 - max 2.4
av.0.97



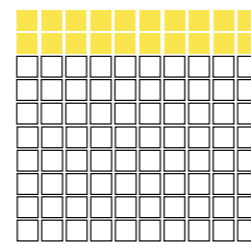
EXISTING SLOW TRAFFIC

1/6 streets



EXISTING LOW VOLUME TRAFFIC STREETS

4/5 streets



UNBUILT SPACE

133874 m² 31%



EXISTING ACESSIBILITY OF WATERFRONT

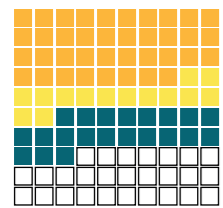
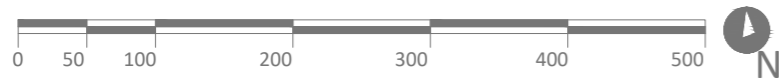
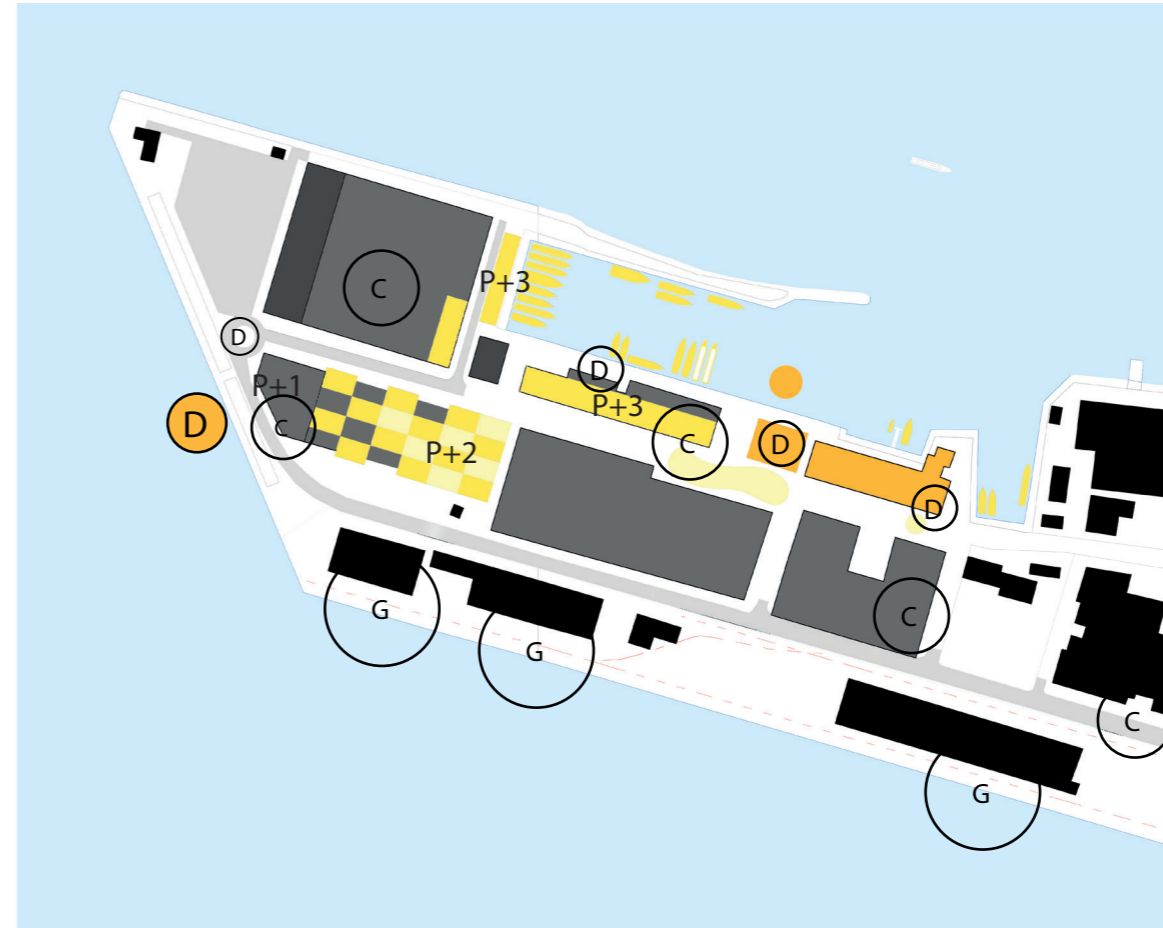
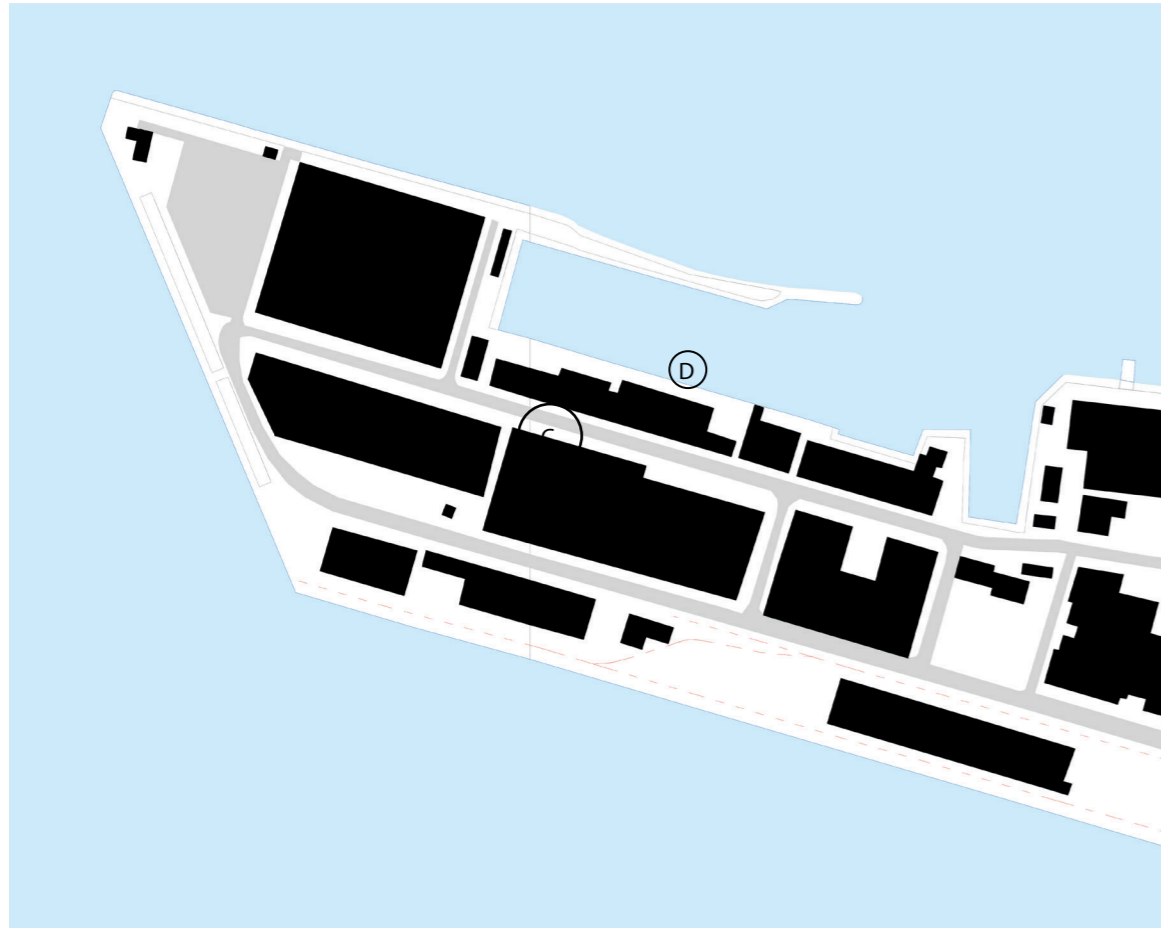
230 m / 2328 m

MIXED USE

DENSITY

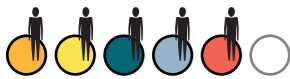
INFRASTRUCTURE

PUBLIC SPACE



FLOOR AREA OF:

JOB	23956 m ²
CARE	9000 m ²
'FREED' TIME	13270 m ²



TYPES OF USER GROUPS

- Harbor and company workers
- Workers and costumers of small enterprises
- Recreation and harbor freaks
- Residents of new housing blocks and boats
- Walkers along the river



TYPES OF HOUSING

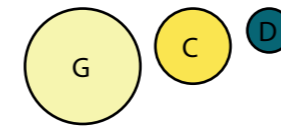
- Rental living and working space 10 x 300m²
 - Co-op medium unit housing 88 x 75m²
 - Co-op small unit housing 115 x 50m²
 - Boat housing 22 x < 200m²
 - Hostel for sailors 200 x 20m²
 - Private housing for families 32 x 150m²
- 467 units



NUMBER OF RESIDENTS

- 875 residents
- long families
 - short artist residencies
 - temporary sailors
 - occasional sailors
 - co-ops
 - collectives
 - students
 - truck drivers
 - pioneers
 - retired sailors
 - sailors families

SCALE OF SERVICES:



- Global (harbor, company headquarters, cargo transport)
- City (workshops, specialized shops)
- District (daycare, assembly space, bar, play ground, retail)



GSI min 0.11 - max 0.82
av. 0.51



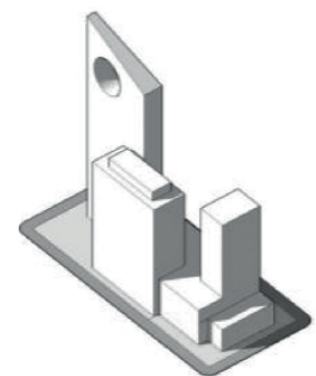
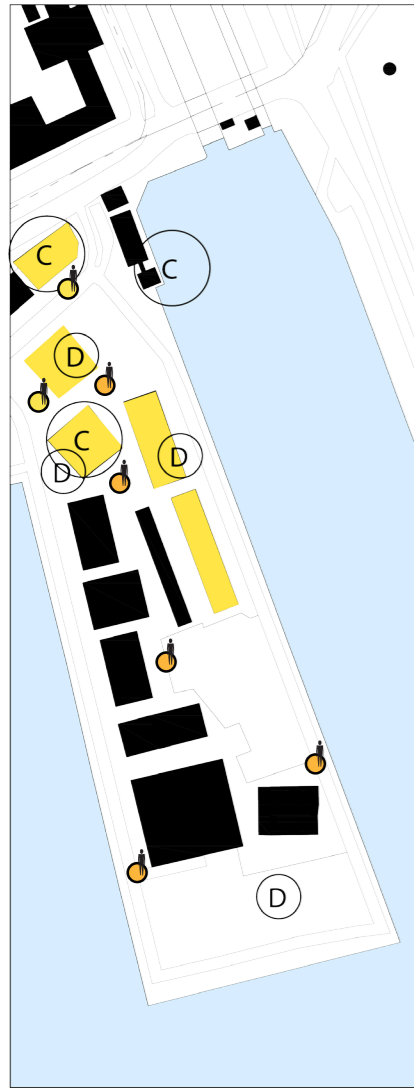
FSI min 0.19 - max 2.4
av. 1.05



SLOW TRAFFIC (MUSCLE POWER ONLY) 5/6 streets

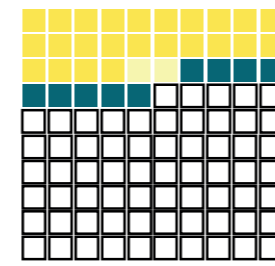


LOW VOLUME TRAFFIC STREETS 2/5 streets



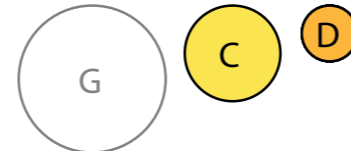
MULLERPIER

Area: 0.15km²



FLOOR AREA OF:

- JOBS 4753 m²
- CARE 460 m²
- 'FREED' TIME 1837 m²
- EMPTY 0 m²



SCALE OF SERVICES:

City (Specialized restaurant, theatre, police)
 District (Fitness centre, daycare, bars, urban garden)



TYPES OF USER GROUPS

- Residents in private housing units
- Customers of retail commercial activities



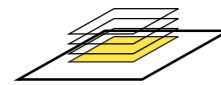
TYPES OF HOUSING

- Rental housing units cca 120 x 90m²
- Private housing (mid-high) 455 x 120m²



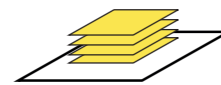
NUMBER OF RESIDENTS

1046 inhabitants 7000 inh/km²



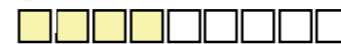
GSI

min 0.62 - max 1
 av. 92



FSI

min 3.05 - max 12.99
 av. 7.00



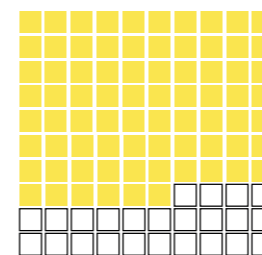
EXISTING SLOW TRAFFIC

4/9 streets



EXISTING LOW VOLUME TRAFFIC STREETS

4/5 streets



UNBUILT SPACE

47434 m² 76%



EXISTING ACCESSIBILITY OF WATERFRONT

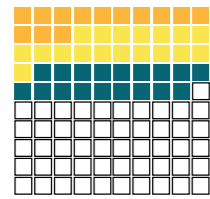
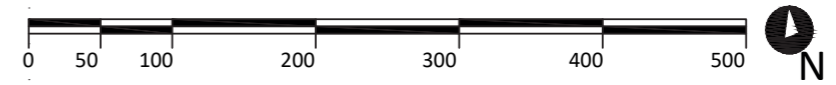
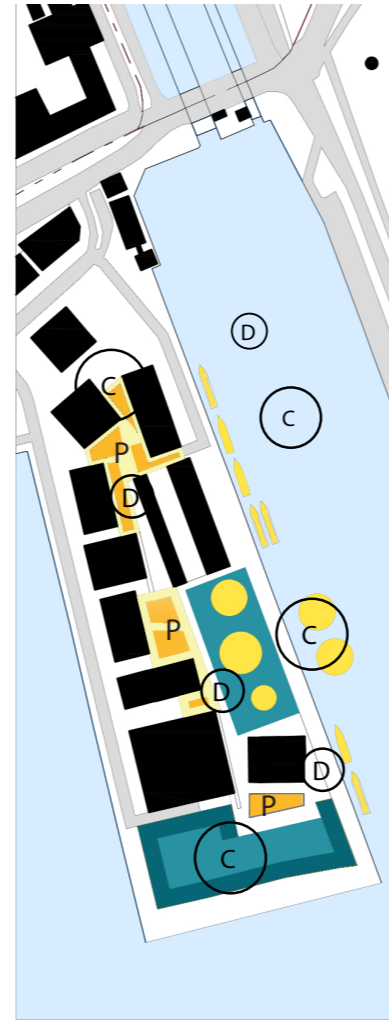
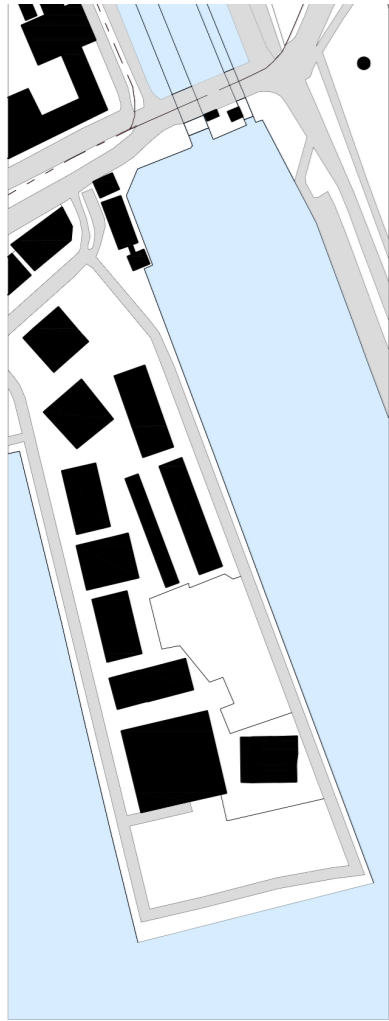
975 m / 1045 m

MIXED USE

DENSITY

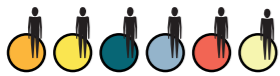
INFRASTRUCTURE

PUBLIC SPACE



FLOOR AREA OF:

- JOBS 4753m²
- CARE 7536 m²
- 'FREED' TIME 7766 m²



TYPES OF USER GROUPS

- Residents in private housing units
- Customers of retail commercial activities
- Workers and customers of small enterprises
- Gardeners
- Campers
- Walkers along the river



TYPES OF HOUSING

- Rental housing units cca 120 x 90m²
 - Private housing (mid-high) 455 x 120m²
 - Seasonal camping place 400 x 10m²
 - Boat housing 7 x < 200m²
 - Eldery care co-op 900m²
- 1012 units



NUMBER OF RESIDENTS

- 2258 residents
- long families co-ops pioneers students
 - short artist residencies pioneers
 - temporary students festival visitors nomads



SCALE OF SERVICES:

- City (Specialized restaurant, theatre, police)
- District (Fitness centre, daycare, bars, urban garden)



GSI min 0.11 - max 0.90
av. 0.75

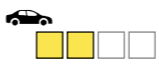


FSI min 0.19 - max 2.4
av. 1.2



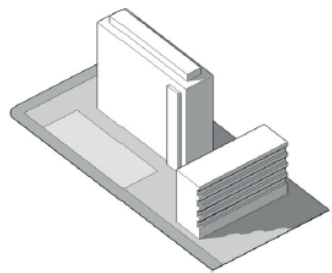
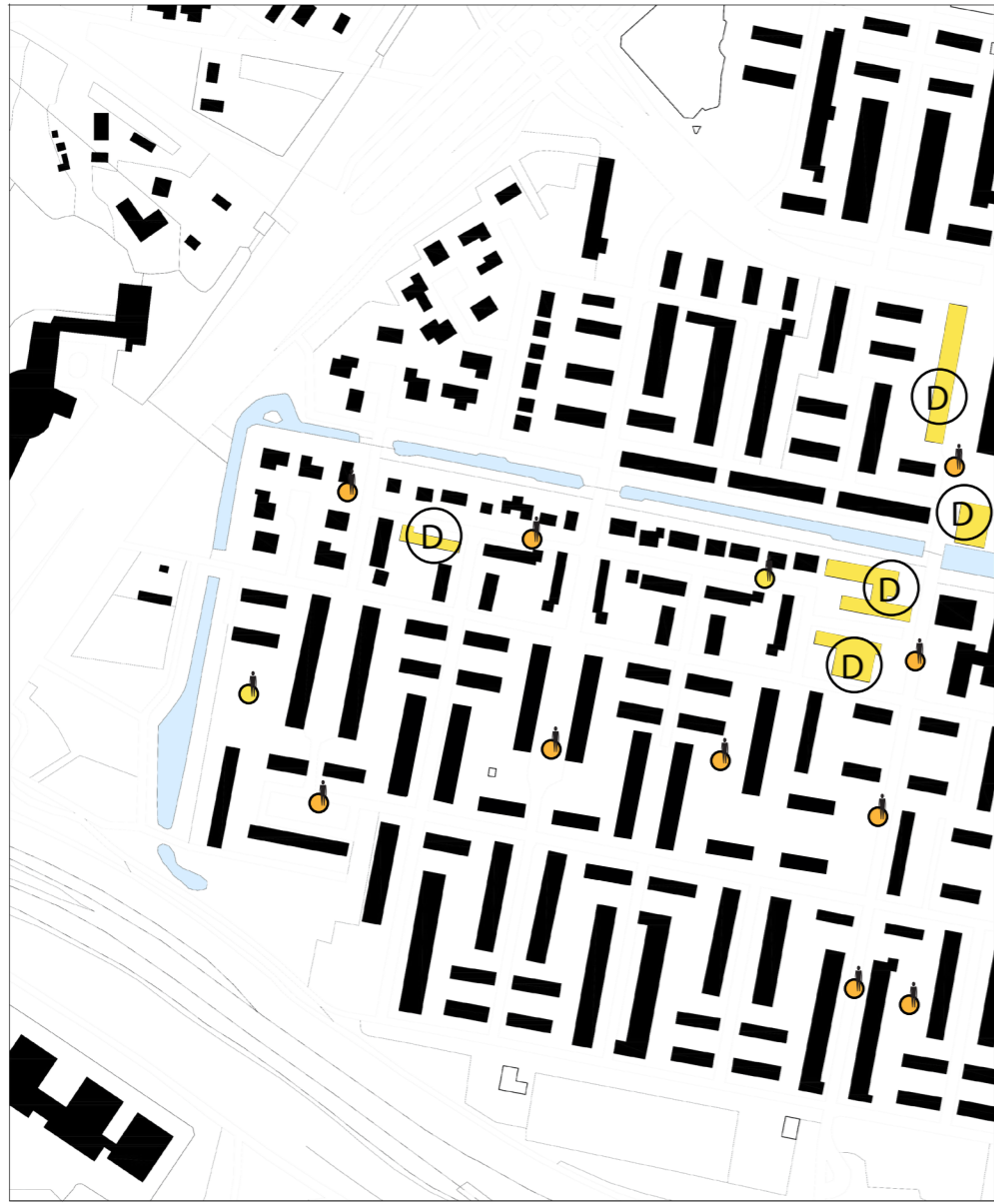
SLOW TRAFFIC (MUSCLE POWER ONLY)

5/9 streets



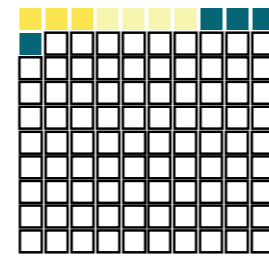
LOW VOLUME TRAFFIC STREETS

2/5 streets



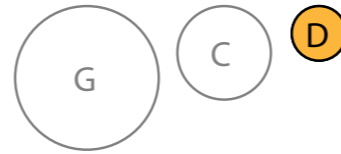
PENDRECHT

Area: 0.48km²



FLOOR AREA OF:

- JOBES 1798 m²
- CARE 3052 m²
- 'FREED' TIME 2503 m²
- EMPTY 400 m²



SCALE OF SERVICES:

District (Basis school, small retail, shop, bar, church, day care, hobby school)



TYPES OF USER GROUPS

- Residents in private housing units
- Children playing on the street



TYPES OF HOUSING

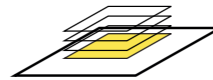
- Rental or social housing units cca 400 x 90m²
- Private housing multiple units 2245 x 90m²
- Private housing family house 23 x 140m²



NUMBER OF RESIDENTS

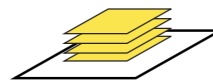
6127 inhabitants

12 500 inh/km²



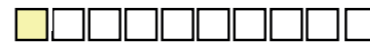
GSI

min 0.07- max 1
av. 0.8



FSI

min 0.14 - max 4
av. 3.5



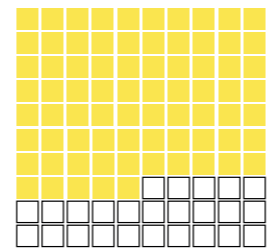
EXISTING SLOW TRAFFIC

1/10 streets



EXISTING LOW VOLUME TRAFFIC STREETS

7/9 streets



UNBUILT SPACE

217526 m² 75%



EXISTING ACCESSIBILITY OF WATERFRONT

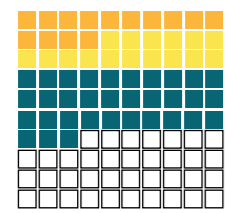
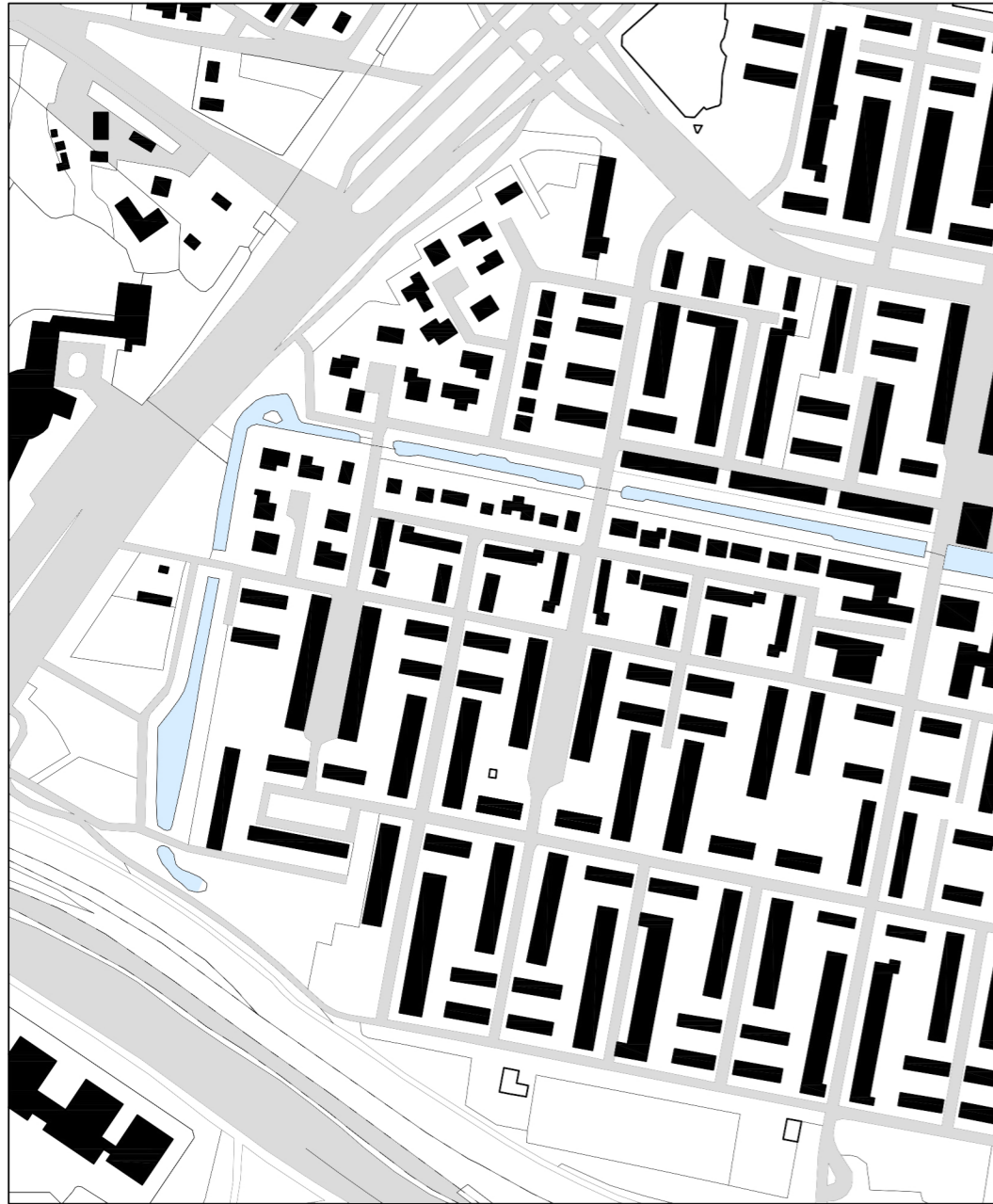
no waterfront in the area

MIXED USE

DENSITY

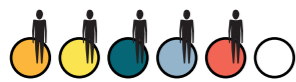
INFRASTRUCTURE

PUBLIC SPACE



FLOOR AREA OF:

- JOBS 28 734 m²
- CARE 29 936 m²
- 'FREED' TIME 70 690 m²



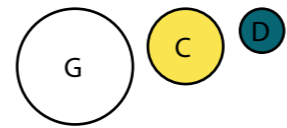
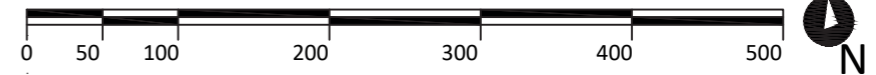
TYPES OF USER GROUPS

- Residents in private housing units
- Children playing on the street
- Costumers of retail commercial activites
- Workers and costumers of small enterprises
- Gardeners



TYPES OF HOUSING

- Rental or social housing units cca 400 x 90m²
 - Private housing multiple units 2245 x 90m²
 - Private housing family house 23 x 140m²
 - Co-operative housing plots 50 x av. 600m²
 - Pioneer pavilions 6 x 640m²
 - Eldery care co-op 3000m²
- 2840 UNITS
5964 RESIDENTS



SCALE OF SERVICES:
 City (Specialized restaurant, specialized shops, crafts, theatre, entrepreneur hub etc.)
 District (Basis school, small retail, shop, bar, church, day care, hobby school)



GSI min 0.7- max 1
av. 0.8



FSI min 0.14 - max 4
av. 3.2



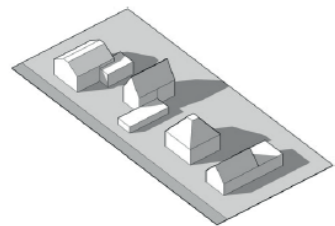
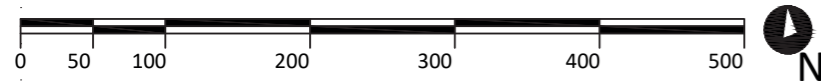
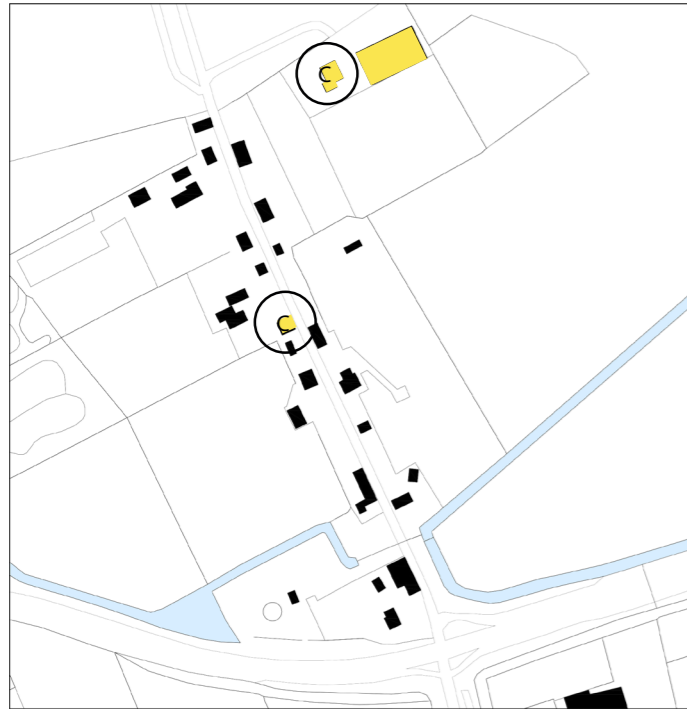
SLOW TRAFFIC
(MUSCLE POWER ONLY)

6/10 streets

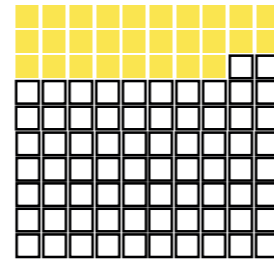


LOW VOLUME TRAFFIC
STREETS

2/5 streets

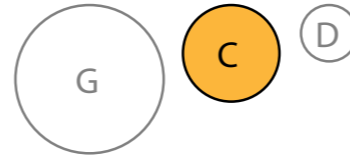


RIJSDIJK
Area: 0.22km²



FLOOR AREA OF:

JOBS 1131 m²
CARE 0 m²
'FREED' TIME 2503 m²



SCALE OF SERVICES:
City (Gold crafts, Sport equipment shop, Agriculture)



TYPES OF USER GROUPS

- Residents in private housing units
- Recreational cyclists, joggers, dog walkers
- Agricultural workers/seasonal workers



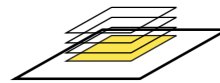
TYPES OF HOUSING

- Private housing family house 15 x 140m²

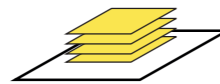
MIXED USE



NUMBER OF RESIDENTS 34.5 inhabitants 150 inh/km²

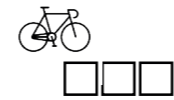


GSI

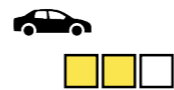


FSI

DENSITY

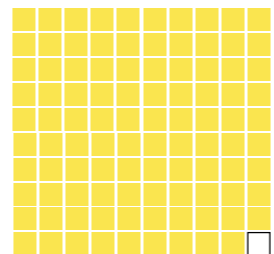


EXISTING SLOW TRAFFIC 0/3 streets



EXISTING LOW VOLUME TRAFFIC STREETS 7/9 streets

INFRASTRUCTURE

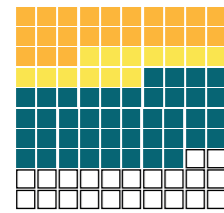
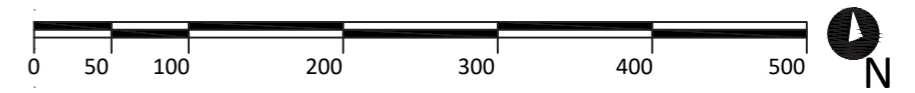


UNBUILT SPACE 228129 m² 98.5%

PUBLIC SPACE

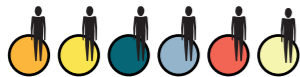


EXISTING ACCESSIBILITY OF WATERFRONT no waterfront in the area



FLOOR AREA OF:

- JOBS 9347m²
- CARE 5372m²
- 'FREED' TIME 22800m²



TYPES OF USER GROUPS

- Residents in private housing units
- Residents of eco-villages
- Recreational cyclists, joggers, dog walkers
- Agricultural workers/seasonal workers
- Campers



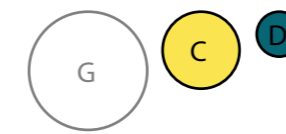
TYPES OF HOUSING

- Private housing family house 15 x 140m²
- Ecological co-operative housing 26 x 316 m²
- Community land trust housing 17 x 316 m²
- Camping site 50 x 20 m²



NUMBER OF RESIDENTS

- 3750 residents 1022 units
- long families co-ops land trust
 - short seasonal workers nomads
 - temporary visitors in eco village recreational sportists



SCALE OF SERVICES:

City (Food production, Permaculture center, Recycling lab, Food lab, Education, Visitor accomodation, Seasonal worker accomodation)
 District (Repair Lab, Day care, Health care, Shops, Playgrounds, Co-op restaurant, Communal facilities)



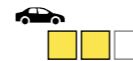
GSI min 0.07- max 1.00
av. 0.43



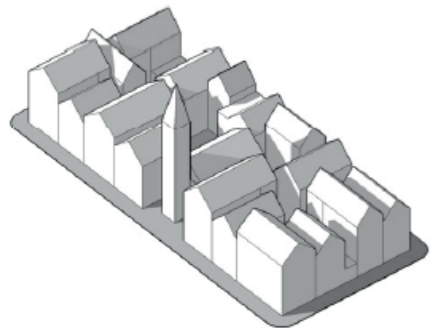
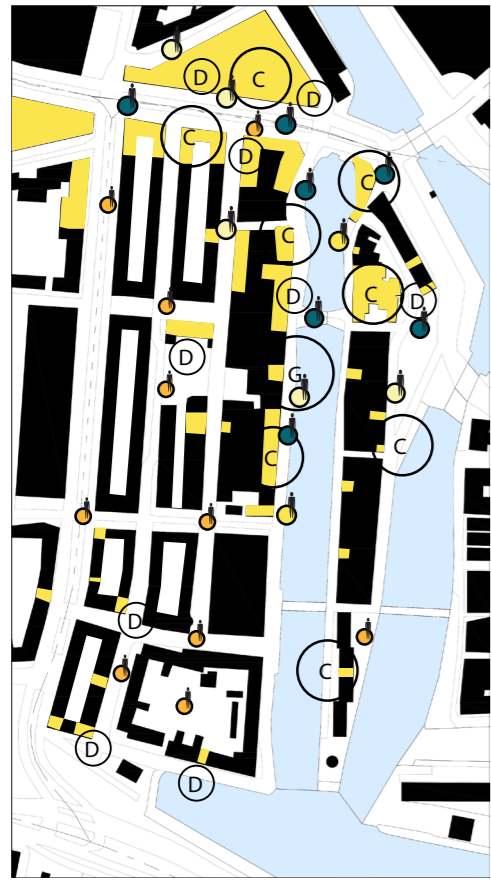
FSI min 0.14 - max 2.00
av. 1.2



SLOW TRAFFIC (MUSCLE POWER ONLY) 4/7 streets

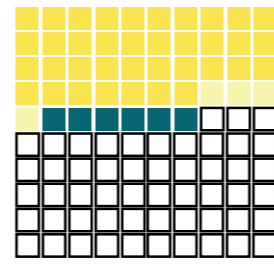


LOW VOLUME TRAFFIC STREETS 2/3 streets



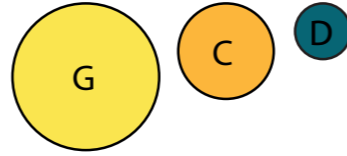
DELFSHAVEN WEST

Area: 0.22km²



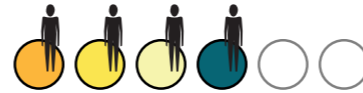
FLOOR AREA OF:

- JOBs 22947 m²
- CARE 2567 m²
- 'FREED' TIME 3891 m²



SCALE OF SERVICES:

- City (Specialized shops, Institutions, Retail nodes, Art galleries, Restaurants, Tourist hotspots, Hostel)
- District (Bars, Day care, Health care, Shops, Playgrounds)
- Global (Company headquarters)



TYPES OF USER GROUPS



TYPES OF HOUSING

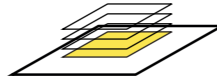
MIXED USE



NUMBER OF RESIDENTS

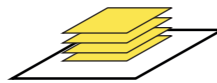
3670 inhabitants

16000 inh/km²



GSI

min 0.43- max 1.0
av. 0.87



FSI

min 1.31 - max 2.9
av. 2.2

DENSITY



EXISTING SLOW TRAFFIC

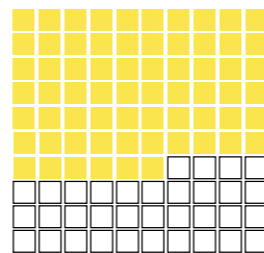
0/12 streets



EXISTING LOW VOLUME TRAFFIC STREETS

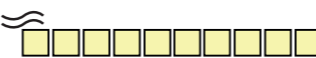
10/12 streets

INFRASTRUCTURE



UNBUILT SPACE

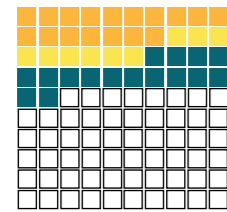
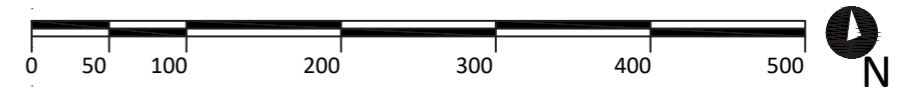
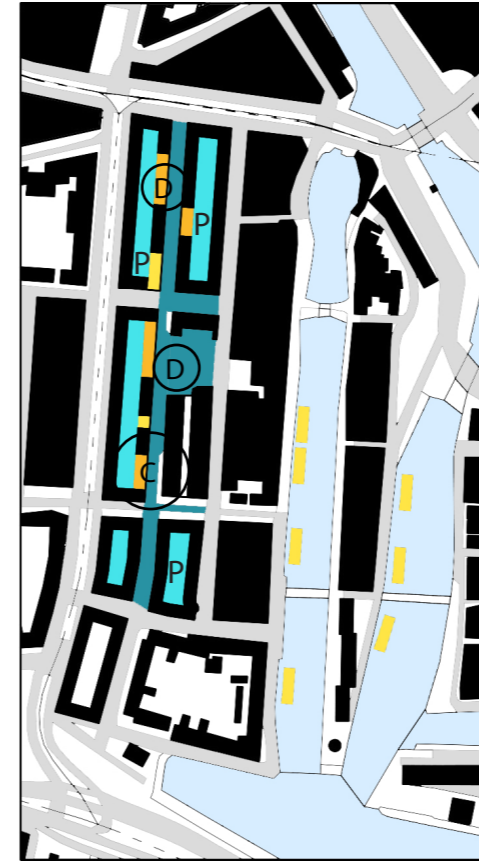
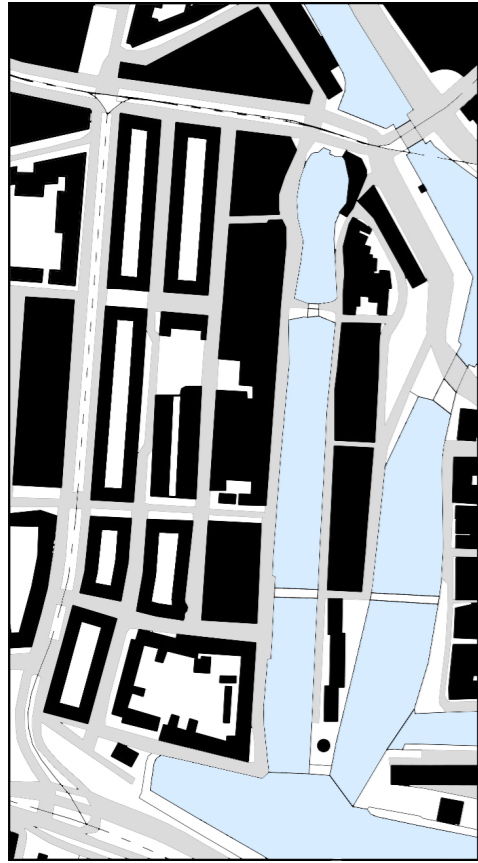
75 677 m² 66%



EXISTING ACCESSIBILITY OF WATERFRONT

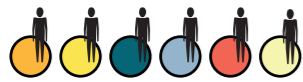
2023/2023
overcrowded with cars

PUBLIC SPACE



FLOOR AREA OF:

- JOBS 20497m²
- CARE 9880m²
- 'FREED' TIME 19341m²



TYPES OF USER GROUPS

- Residents in private housing units
- Costumers of retail commercial activites
- Employed in the area
- Children on the streets
- Visitors of old harbour
- Visitors of galleries, institutions etc.



TYPES OF HOUSING

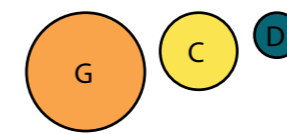
- Private housing (mid-hi income) 1072 x 90 m²
 - Rental housing (mid-hi income) 189 x 90 m²
 - Rental social housing (low) 283 x 90 m²
 - Student rental housing (low-mid) 42 x 90 m²
 - Boat houses (mid-hi income) 20 x <200 m²
- 1022 units



NUMBER OF RESIDENTS

3750 residents

- long families co-ops students
- short artist residencies tourists
- temporary students digital nomads



SCALE OF SERVICES:

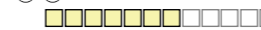
- City (Specialized shops, Institutions, Retail nodes, Art galleries, Restaurants, Tourist hotspots, Hostel, Repair Lab)
- District (Bars, Day care, Health care, Shops, Playgrounds, Co-op restaurant)
- Global (Company headquarters)



GSI min 0.43- max 1.0
av. 0.9



FSI min 1.31 - max 2.9
av. 2.3



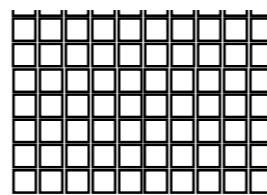
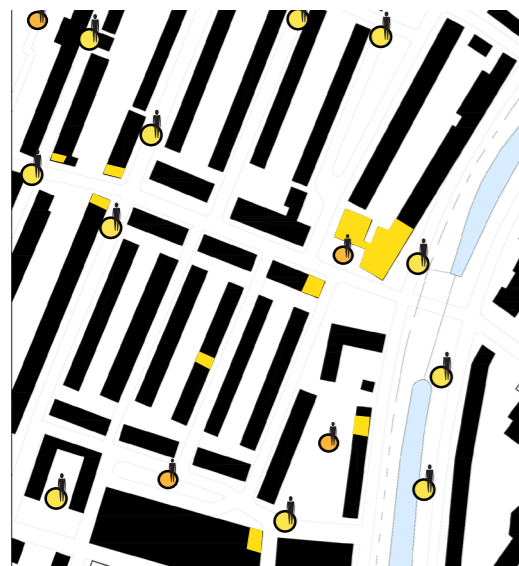
SLOW TRAFFIC (MUSCLE POWER ONLY)

7/12 streets

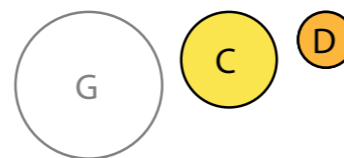


LOW VOLUME TRAFFIC STREETS

3/5 streets



■ JOBS 1714 m²
■ CARE 2159 m²
■ 'FREED' TIME 2013 m²
■ EMPTY 1000 m²



SCALE OF SERVICES:
 District (Basis school, small retail, shop, day care)
 City (Specialized shop)



TYPES OF USER GROUPS
● Residents in private housing units
● Children playing on the street

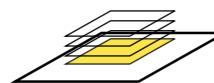


TYPES OF HOUSING
● Rental or social housing units cca 130 x 90m²
● Private housing multiple units 260 x 90m²
● Private housing family house 298 x 140m²

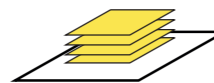
MIXED USE



NUMBER OF RESIDENTS 1741 inhabitants 10 600 inh/km²



GSI min 0.07- max 1 av. 0.8



FSI min 0.14 - max 4 av. 3.5

DENSITY

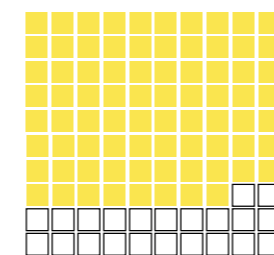


EXISTING SLOW TRAFFIC 1/11 streets



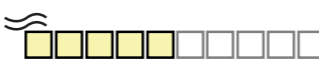
EXISTING LOW VOLUME TRAFFIC STREETS 6/10 streets

INFRASTRUCTURE

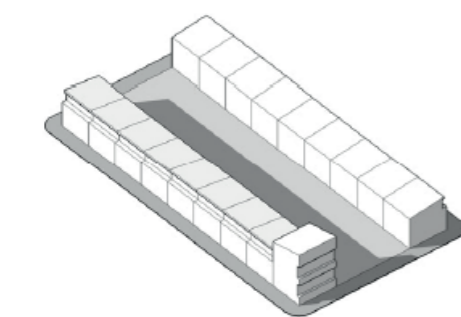


UNBUILT SPACE 117501 m² 78%

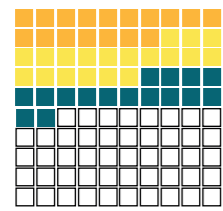
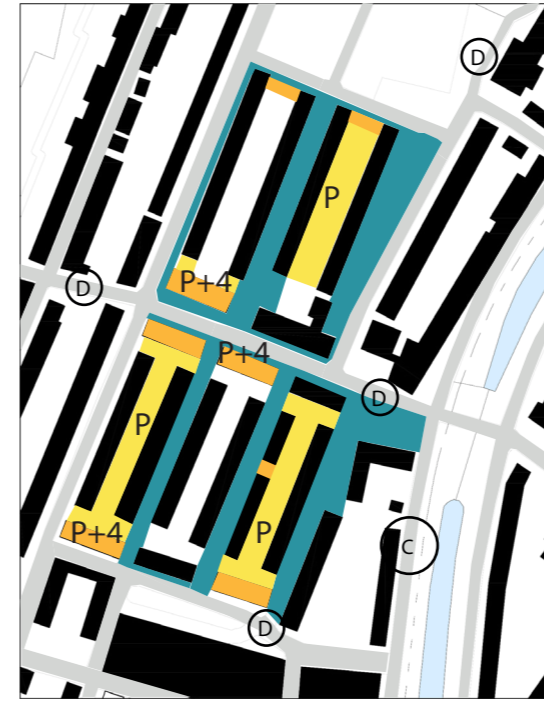
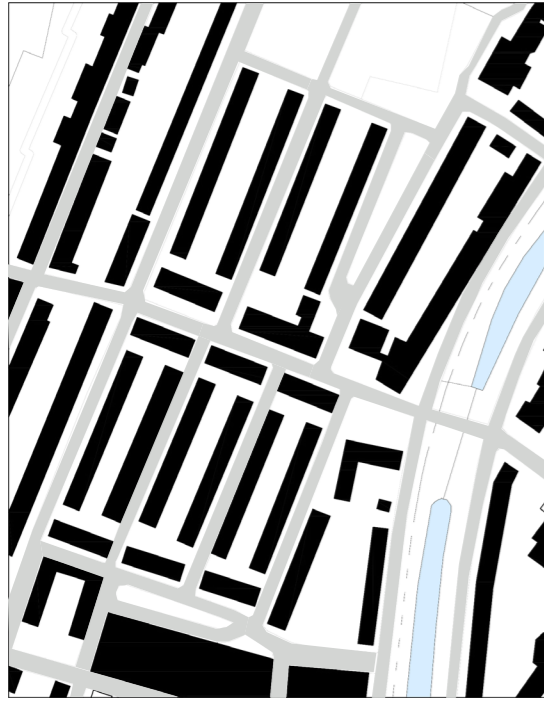
PUBLIC SPACE



EXISTING ACCESSIBILITY OF WATERFRONT 240/580 tram track separates channel

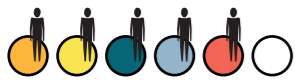


CHARLOIS SOUTH
 Area: 0.15km²



FLOOR AREA OF:

- JOBS 12 493 m²
- CARE 13 321 m²
- 'FREED' TIME 11 914 m²



TYPES OF USER GROUPS

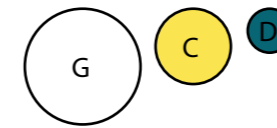
- Residents in private housing units
- Children playing on the street
- Costumers of retail commercial activites
- Workers and costumers of small enterprises
- Gardeners



TYPES OF HOUSING

- Rental or social housing units cca 170 x 90m²
- Private housing multiple units 1100 x 90m²
- Private housing family house 200 x 140m²
- Co-operative housing plots 5 x av. 600m²
- Eldery care co-op 3000m²

1475 UNITS
4425 RESIDENTS



SCALE OF SERVICES:
City (Specialized restaurant, specialized shops, crafts, entrepreneur hub etc.)
District (Basis school, small retail, shop, bar, church, day care, hobby school, repair shop, infoshop)



GSI min 0.7- max 1
av. 0.88



FSI min 0.14 - max 4
av. 4.2



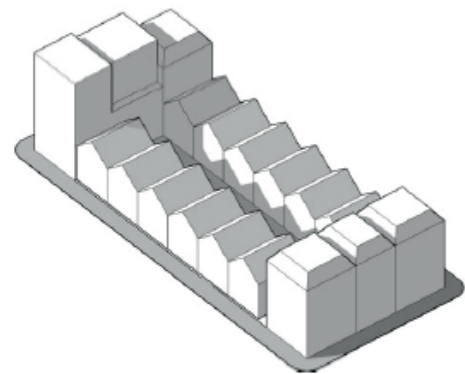
SLOW TRAFFIC
(MUSCLE POWER ONLY)

6/11 streets



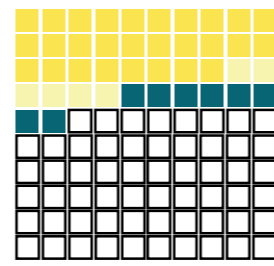
LOW VOLUME TRAFFIC
STREETS

3/5 streets



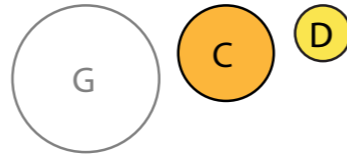
DELFSHAVEN EAST

Area: 0.54km²



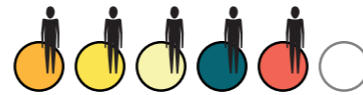
FLOOR AREA OF:

- JOBs 57099 m²
- CARE 13332 m²
- 'FREED' TIME 15412 m²



SCALE OF SERVICES:

City (Theaters, Schools, Specialized shops, Institutions, Retail nodes, Civic organizations)
 District (Bars, Basic school, Day care, Health care, Shops, Playgrounds,)



TYPES OF USER GROUPS

- Residents in private housing units
- Children and adolescents around schools
- Visitors of theaters, institutions etc.
- Employed in the area
- Customers of commercial services



TYPES OF HOUSING

- Private housing (mid-hi income) 1703 x 90 m²
- Rental housing (mid-hi income) 189 x 90 m²
- Rental social housing 680 x 90 m²

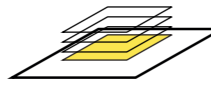
MIXED USE



NUMBER OF RESIDENTS

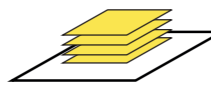
6528 inhabitants

12000 inh/km²



GSI

min 0.26- max 1
av. 0.61



FSI

min 0.54 - max 3.96
av. 2.45

DENSITY



EXISTING SLOW TRAFFIC

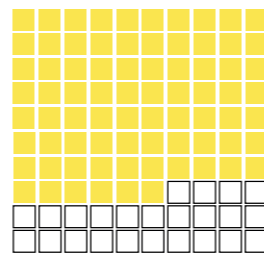
4/17 streets



EXISTING LOW VOLUME TRAFFIC STREETS

7/9 streets

INFRASTRUCTURE



UNBUILT SPACE

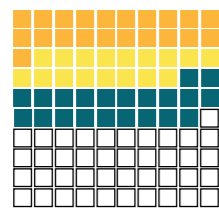
340463 m² 76%



EXISTING ACCESSIBILITY OF WATERFRONT

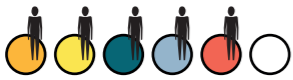
923/923*
421m not for disabled people

PUBLIC SPACE



FLOOR AREA OF:

- JOBS 57 873 m2
- CARE 40 936 m2
- 'FREED' TIME 57 690 m2



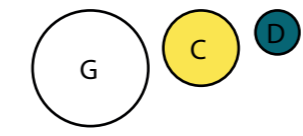
TYPES OF USER GROUPS

- Residents in private housing units
- Children and adolescents around schools
- Visitors of theaters, institutions etc.
- Employed in the area
- Costumers of commercial services

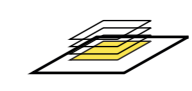


TYPES OF HOUSING

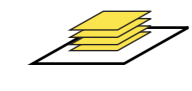
- Private housing (mid-hi income) 1703 x 90 m2
- Rental housing (mid-hi income) 189 x 90 m2
- Rental social housing 680 x 90 m2
- Renting co-op 200 x 90m2



SCALE OF SERVICES:
 City (Theaters, Schools, Specialized shops, Institutions, Retail nodes, Civic organizations)
 District (Bars, Basic school, Day care, Health care, Shops, Playgrounds,)



GSI min 0.26- max 1
 av. 0.61



FSI min 0.56 - max 3.96
 av. 2.45



SLOW TRAFFIC (MUSCLE POWER ONLY)

9/17 streets



LOW VOLUME TRAFFIC STREETS

5/8 streets



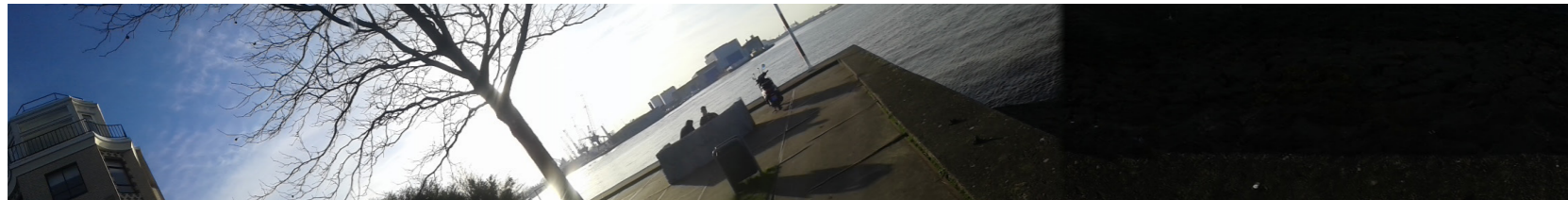
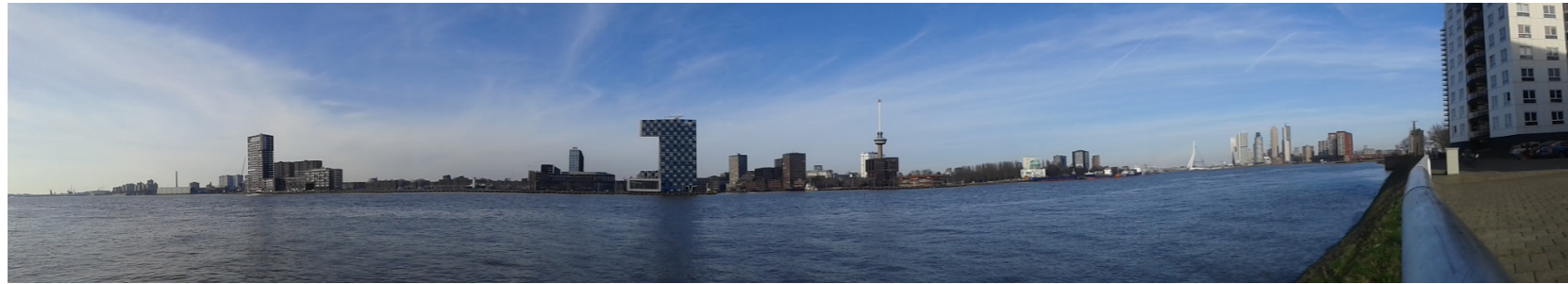
[fig.42] Images of Rotterdam's waterfront areas

source: author



[fig.43] Indicators of how De-growth principles can be implemented in 7 different urban types

source: author (based on analysis of Rotterdam)





Urban core

Compact city

Suburban terraces

Rural detached

Park city

Generic city

Business area

MIXED USE

Lack of care facilities

Lack of spaces for freed time

Lack of diverse housing options, including diverse periods of stay

Lack of jobs

Lack of care facilities

Lack of space for freed time

Lack of diverse housing options, including diverse periods of stay

Lack of care facilities

Lack of diverse housing options, including diverse periods of stay and income

Lack of jobs

Lack of care facilities

Lack of space for freed time

Lack of diverse housing options, including diverse periods of stay

Lack of care facilities

Lack of diverse housing options, including diverse periods of stay

Lack of care facilities

Lack of spaces for freed time

Lack of any housing options, including diverse periods of stay

DENSITY

GSI can be increased

Low household density=1,7

Low household density=1,9

GSI can be increased significantly

Low household density=1,6

GSI can be increased significantly

Increase of FSI can be tolerated

GSI can be increased

Low household density=1,6

Increase of FSI can be tolerated

Low household density=1,6

GSI can be increased

INFRASTRUCTURE

Complete lack of pedestrian areas

Large amount of low traffic density streets overcrowded with parking space

Lack of pedestrian areas

Lack of pedestrian areas

Large amount of low traffic density streets overcrowded with parking space

Lack of public pedestrian areas

Large amount of low traffic density streets overcrowded with parking space

Large amount of low traffic density streets overcrowded with parking space

Lack of pedestrian areas

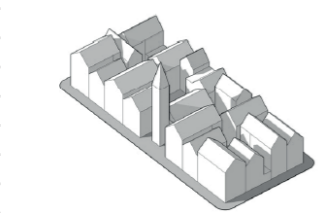
Large amount of low traffic density streets overcrowded with parking space

PUBLIC SPACE

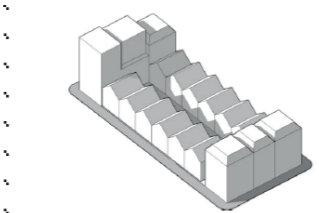
Waterfront inaccessible because of car parking

Waterfront inaccessible for children and disabled

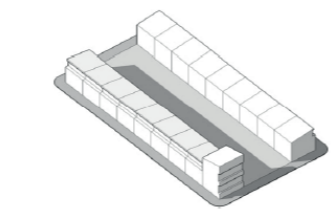
Waterfront inaccessible because of industry



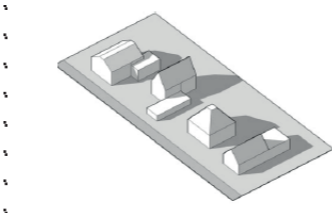
Urban core



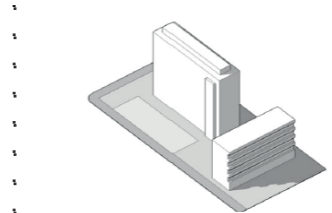
Compact city



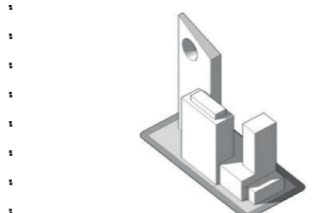
Suburban terraces



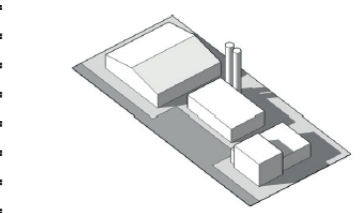
Rural detached



Park city




Generic city

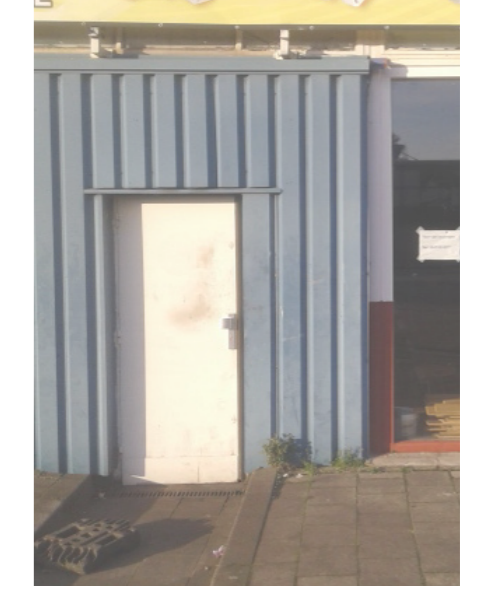
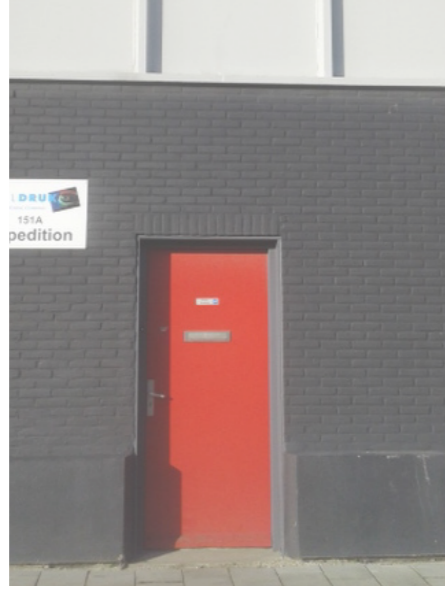


Business area

[fig.46] Indicators of De-growth scenario for urban planning

source: author (based on analysis of Rotterdam)

	PRINCIPLE	OPTIMAL	MINIMAL	VARIABLE	FRAME		
	Principle	Optimal	Minimal	Variable	Frame		
 	MIXED USE	<p>Equally distributed facilities providing job, care or freed time*</p> <p>Mixture of housing for dwellers of different period of stay and financial perspective***</p>	<p>At least 20% of each different function</p> <p>Housing for at least 3 different periods of stay and 4 different financial perspectives</p>	<p>At least 10% of each different function</p> <p>Housing for at least 2 different periods of stay and 2 different financial perspectives</p>	<p>Floor area of particular function in area of characteristic fabric of 5-10 blocks</p> <p>Number of types of housing in characteristic block. Refers to period of stay and financial perspective</p>	<p>Per 5-10 blocks, Floor space area including open space</p> <p>Per characteristic block. Financial perspective refers to housing cost per month, period of stay refers to stay through year</p>	
	 	DENSITY	<p>Minimal increase of built space</p> <p>Decrease of built square meters per inhabitant</p>	<p>The increase of GSI is restricted to 5% of existing per 5 years per district</p> <p>The FSI remains the same</p> <p>Average number of persons per household is 4</p>	<p>The increase of GSI is restricted to 20% of existing per 5 years per district</p> <p>The FSI increases 5% per 5 years per district</p> <p>Average number of persons per household is 3</p>	<p>Number of residents of same residence type in characteristic fabric. Refers to period of stay and financial perspective</p> <p>GSI=Gross space index per characteristic block</p> <p>FSI=Floor space index per 5-10 blocks</p> <p>Number of persons per household average</p>	<p>Per district, per 5 year period</p> <p>Per characteristic block type per household</p>
 		INFRASTRUCTURE	<p>Slow (muscle) based mobility dominating public space over motorized</p> <p>Balanced intensity of traffic through all levels of infrastructure (highways-city roads-local streets)</p> <p>Minimizing amount of space lost on parking</p>	<p>At least 50% of streets are slow (muscle powered) traffic only</p> <p>Maximum half of the traffic streets with low intensity of traffic</p> <p>No private cars, shared vehicles and decentralized public system</p>	<p>At least 30% of streets are slow (muscle powered) traffic only</p> <p>Maximum one third of the traffic streets with low intensity of traffic</p> <p>30% of privately owned vehicles substituted by alternative options ie. car sharing, subsidized lifestyle</p>	<p>Number of streets that are restricted for motorized vehicles</p> <p>Intensity of traffic is defined by number of cars per hour. Low density is less than 50 cars/h measured during peak hours</p> <p>Number of privately owned vehicles occupying parking lots</p>	<p>Per district, Number of streets refers to full street with unique name</p> <p>Per district, Number of streets refers to full street with unique name</p> <p>Per 5-10 blocks, private car belonging to area is the one that spends more than 8 hours on one parking spot</p>
	 	LOCAL PRODUCTION	<p>Minimizing waste and using city as resource of recyclable goods</p> <p>Maximizing of renewable energy based on local demand</p> <p>Maximizing capacities for producing energy and food locally based on local demand</p>	<p>None of the heat as a secondary product of industry is wasted, 50% of recyclable materials is reused within the area (ie. biomass, building material, electronics)</p> <p>80% of local energy demand is produced as renewable</p> <p>100% of energy demand is locally produced, locally produced food covers basic needs of the area</p>	<p>Waste of heat is reduced by half (to 23%), 20% percent of recyclable materials are reused in the area</p> <p>40% of local energy demand is produced as renewable</p> <p>50% of energy demand is locally produced, exemplary amount of food is produced in each area</p>	<p>Percentage of unused heat compared to total produced heat, percentage of recycled goods to total amount of recyclable waste</p> <p>Percentage of energy produced from renewable sources compared to total local demand per district</p> <p>Percentage of energy produced within the administrative borders of district</p>	<p>Per region. Focus is on relation harbor-city-open space</p> <p>Per administrative district</p> <p>Per administrative district</p>
		 	PUBLIC SPACE	<p>Enabling neighbourhood self-governance</p> <p>Making river and channel waterfronts fully accessible</p>	<p>For every 300 citizens there is and neighbourhood assembly body organized (Based on organizational theory of N.Balder)</p> <p>On both side of the river there is at least 25km of publicly accessible waterfront</p>	<p>For every administrative district there is open exemplary assembly body with its own space</p> <p>On both side of the river there is at least 15km of publicly accessible waterfront</p>	<p>Number of assembling bodies, their size in number of participants and their governing capability</p> <p>Length of publicly accessible waterfront</p>



[fig.44] Domesticity in harbour, doors of warehouses
source: author

IMPLEMENTATION:THE DE-GROWTH CITY





7. Implementation

7.1. GOVERNANCE LEVEL

How to go beyond the folk politics of small spontaneous local and limited actions?



7.1.1. De-growth vs 8+8+8 city

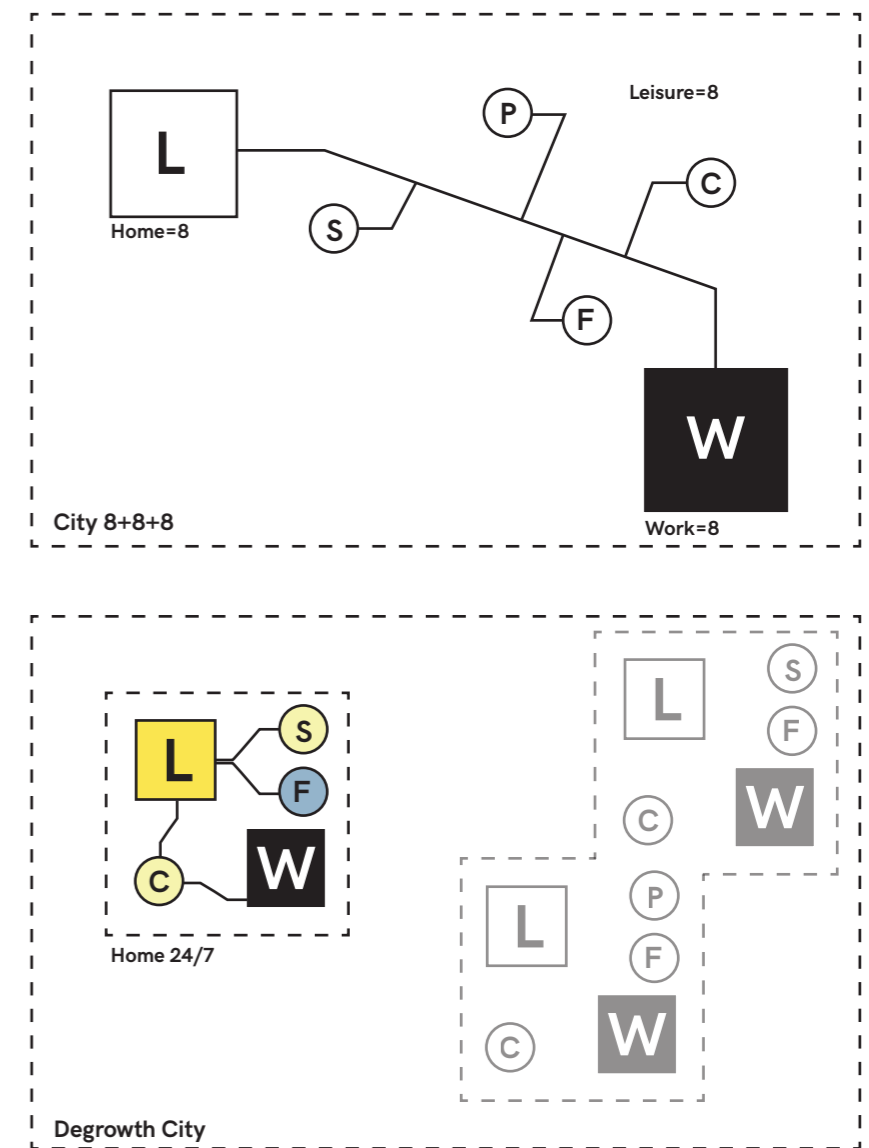
Urban forms are primarily result of process strongly dependent on governance. In this sense De-growth should be designed process. The first aim is to go beyond small, local scale, spontaneous project towards occupying actual multi-scalar planing field with the urgency for transition towards De-growth.

The growth imperative in urban environments sets the demand for expansion in various forms. From demand for physical space (i.e. infrastructure and personal space) to demand for energy and resources that results in expansion of non-physical footprint of the cities (ie. Energy demand or CO2 emission). The thesis recognizes densification and strong partition of private/public space from spaces for common resources as a way to set the boundaries to this process. This way square meter per person is reduced, spaces for jobs-care-freed time are in balance, need for mobility is reduced and city becomes dynamic rather than efficient system where different areas serve multiple purposes. Down with the zoning!

The thesis sets measurable indicators for framing this densification and partition. In example minimum 30% of private cars per household substituted by alternatives i.e. car sharing, subsidized lifestyle would be indicator of taking a De-growth course of development. Set of the indicators presented in the thesis is measurable but what makes it transferable is placing them into 7 generic urban types different his-

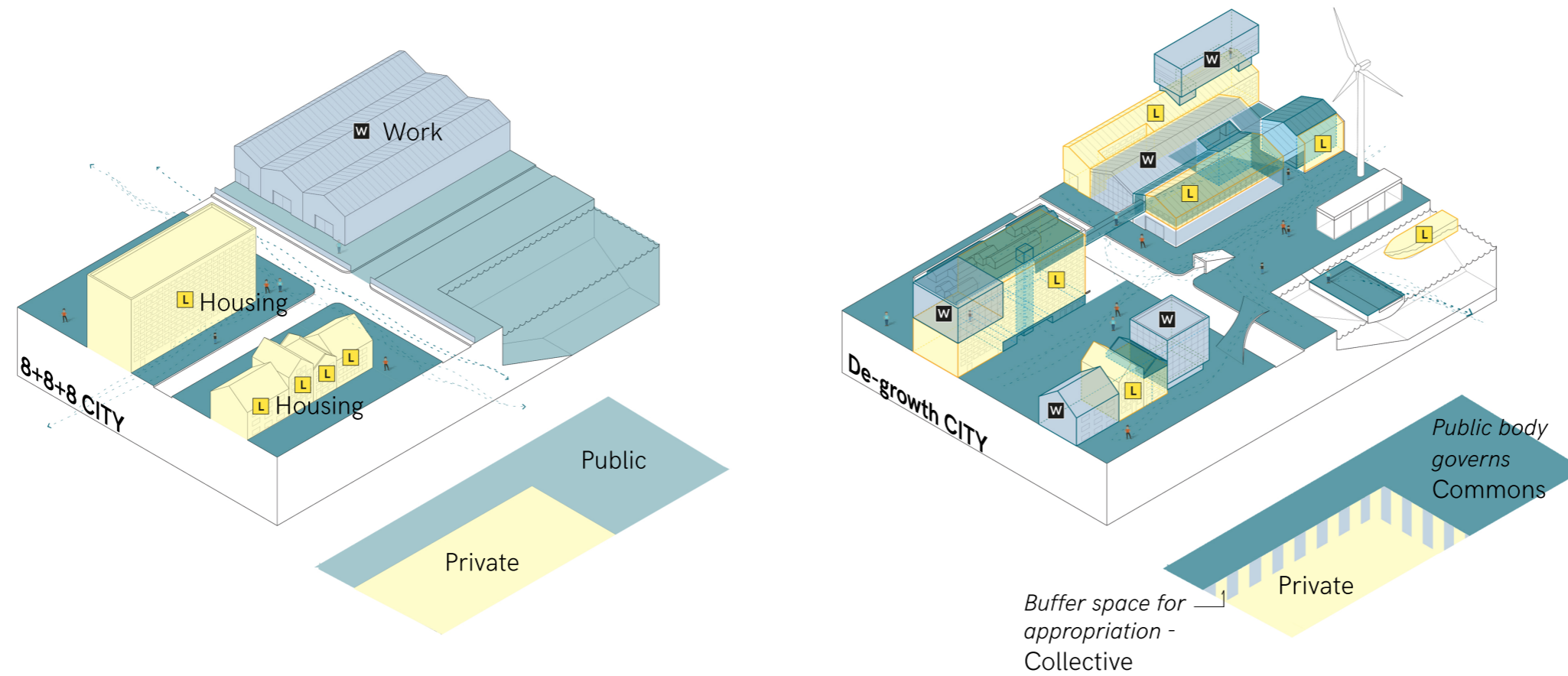
torically, typo-morphologically and functionally and testing them. This way indicators became site-specific. Set of the indicators presented in the thesis is measurable but what makes it transferable is placing them into 7 generic urban types different historically, typo-morphologically and functionally and testing them. This way indicators became site-specific and design oriented.

On conceptual level we could describe the most essential difference between contemporary city and the one De-growth implies like this: In traditional city is based on 8 hours work time and remaining time divided between sleep and leisure. Since the work and sleep are physically detached and usually distant capitalism places number of traps on the way between the two in order to force one to buy, spend and co-create growth during his/her 8 hours of leisure. In example theaters, shopping centres, recreation facilities etc. Essentially what De-growth city want to achieve is to eliminate the distance between working space and housing in order to reduce need for mobility and infrastructure, but more importantly to gain time for citizen to enjoy freed time and co-create conviviality. De-growth implies that space of living and working are condensed together with all the facilities needed to one. Within relatively small radius of distance from personal spaces traditional economic processes of the city can be preserved: ownership, rent, working hours, real estate value etc.



[fig.45] 8 hours city vs. De-growth city
source: author

[fig.46] Conclusions on analysis of capacities of urban fabric for transition



Growth City

Islands of urban types with distinct monofunctional use
Hierarchically organized public infrastructure

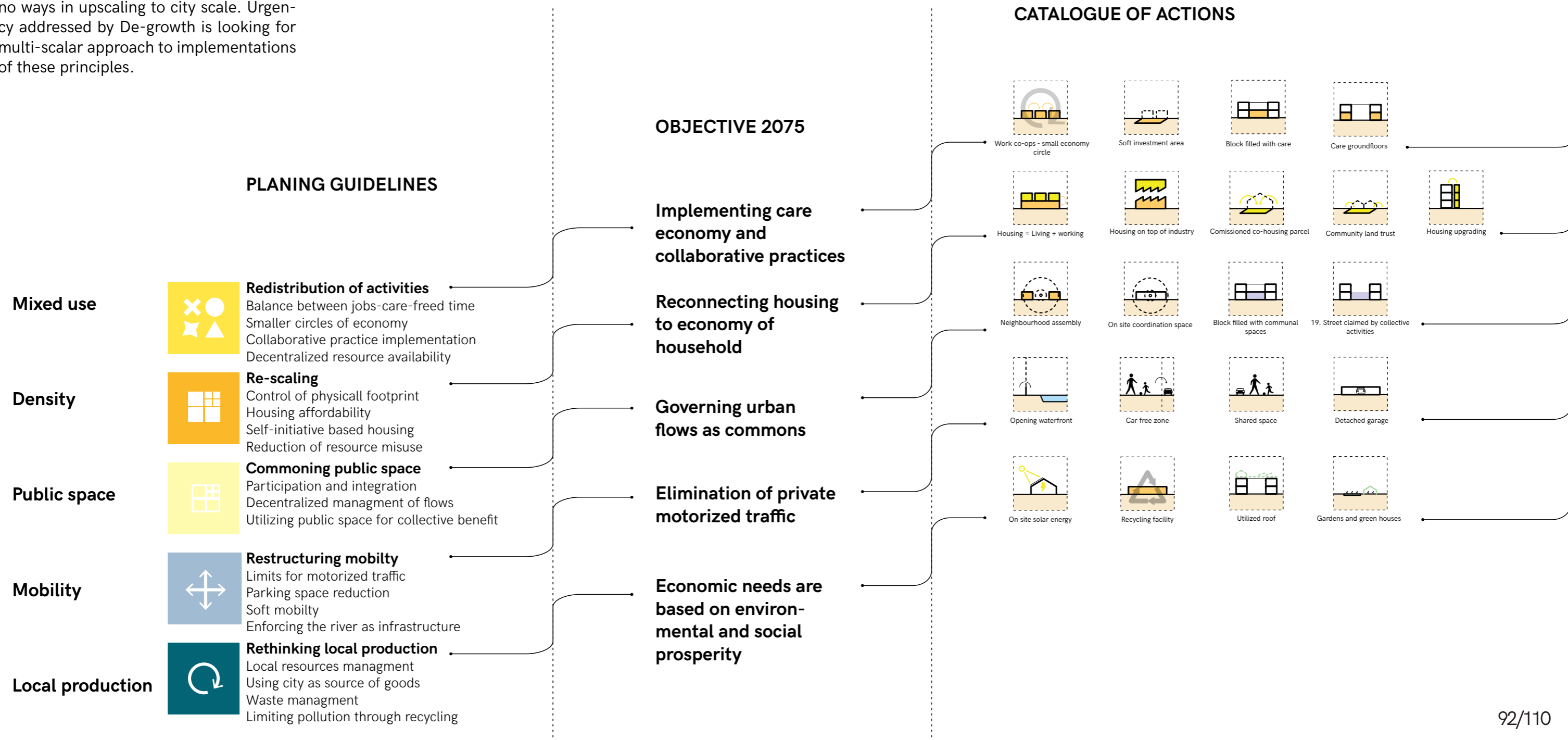
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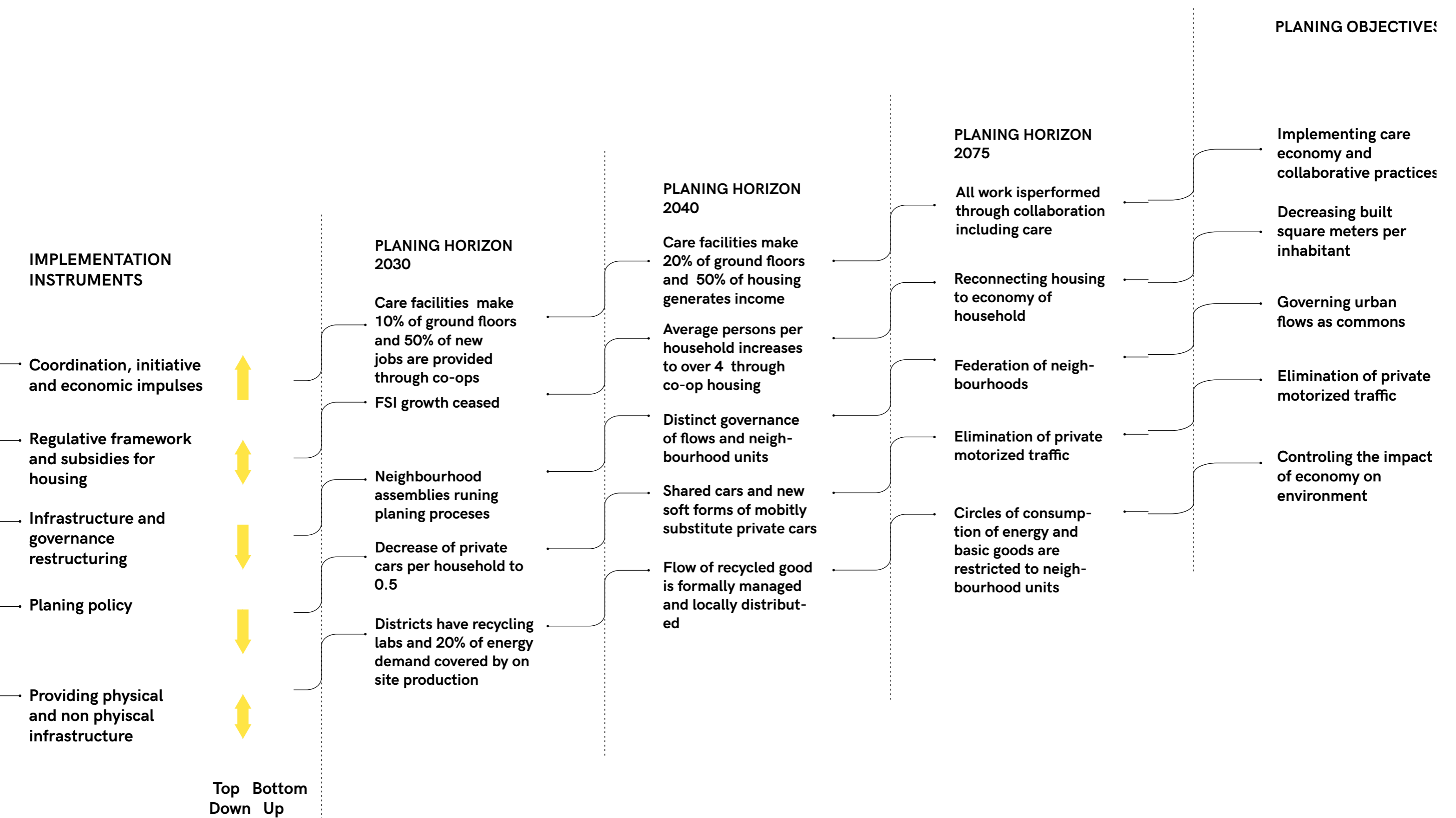
De-growth city

Interrelated patches of urban types with distinct substructure of functions
Polycentric system of locations of public interactions and commoning

7.1.2. Planing objectives and actions

There is number of collectives, projects and initiatives that are not only non-growth oriented but they are decolonizing the ways space is produced and managed from mainstreams of growth oriented economy. By analysing how they conceptualize their principles into space it is possible to understand essentially different spatial characteristics they produce. They are the seed of the De-growth we are looking for in the cities. However their impact is limited, they are often non-systematic and time demanding example of incredible collective and personal effort that find no ways in upscaling to city scale. Urgency addressed by De-growth is looking for multi-scalar approach to implementations of these principles.

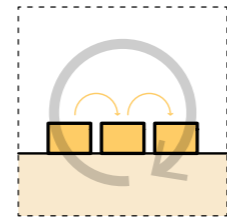




Mixed use



Redistribution of activities
 Balance between jobs-care-freed time
 Smaller circles of economy
 Collaborative practice implementation
 Decentralized resource availability



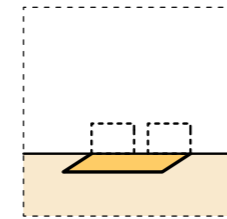
Work co-ops - small economy circle

Working co-operatives

Services and production initiated and run by groups where all the members have share in decision making and profit. Integreted in local economy and exchange of goods and services in immediate surrounding.



De Besturing, Rotterdam
 was founded in 2006 as co-op of artists. In the past years De Besturing transformed from a temporary studio complex into a sustainable collective of artists, designers and other uncommon minds.



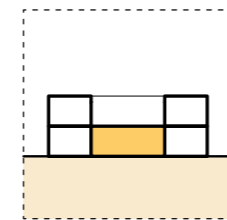
Soft investment area

Soft investment area

Spaces and plots of land given by municipality or socially aware developers for local businesses. Ideal fro implementation of repair and recycle economy and skill exchange.



Keilewerf, Rotterdam
 What started in 2014 (as an initiative of the Treehouse Foundation) with a vacant plot of 3000 m2 is now a breeding ground for now more than 40 (young) creative entrepreneurs.



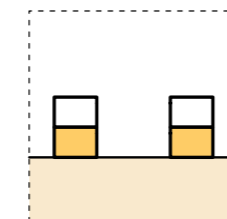
Block filled with care

Inneryards turned into care space

Eldery social spaces, day care, calssrooms, workshops placed in collectively or privately developed parts of inner courtyards.



Vrijburcht, Amsterdam
 Via theater, dining and various activities, neighborhood residents can enjoy the social aspects of Vrijburcht housing complex. It offers the opportunity to realize cultural and social events at the neighborhood level.



Care groundfloors

Groundfloors turned into care space

Eldery homes, day care, collective kitchens, repair shops etc. transform groundfloors in active boundary between private and public. Care is becoming integreted part of housing program.



Stad in de Maak, Rotterdam
 Uses ground floor of abandoned housing block as space for cinema, workshop and educational space run as non profit project.

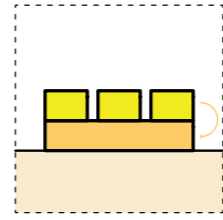
[fig.48] Tools for redistirbution of activities

Density



Re-scaling

- Control of physical footprint
- Housing affordability
- Self-initiative based housing
- Reduction of resource misuse



Housing = Living + working

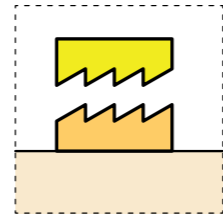
Housing units with work spaces

Housing that has incorporated space for creating income of the household. Newly built, renewed or redesigned in this way can be tactic of wide variety of forms but with the clear goal-to make housing not only affordable but instrument of household sustainability.



Casa Familiar, San Ysidro, Mexico

The community-based organization Casa Familiar developed a housing project for an area of San Ysidro. Project creates a complex system of housing, with integrated shared space that would acknowledge and exploit the multiuse development that is standard there.



Housing on top of industry

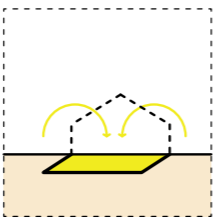
Housing in harbour

Interpolation of living units in the harbour areas can serve two purposes: First is to limit the harbours growth and second to create spaces for pioneering ways of life that need larger spaces to generate income.



Feri squat, Hamburg

Squatters community in the middle of Hamburg's harbour that is placed between container ground and docks.



Comissioned co-housing parcel

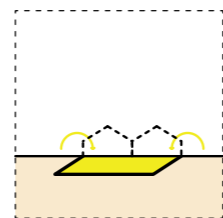
Comission of co-housing

Plots of land developed by the group of citizens. Various forms of ownership, building and typologies are ensuring flexibility of housing stock and increase of hosuing density



French quartier, Tubingen

The city of Tubingen has various examples of neighbourhoods developed on basis of baugruppen initiative and co-housing. Most famous is Frech quartier.



Community land trust

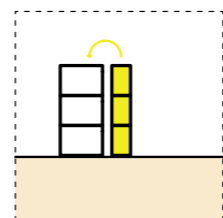
Community land trust

CLT is a nonprofit corporation that develops and stewards affordable housing, community gardens, civic buildings, commercial spaces and other community assets on behalf of a community.



Community Land Trust Bruxelles

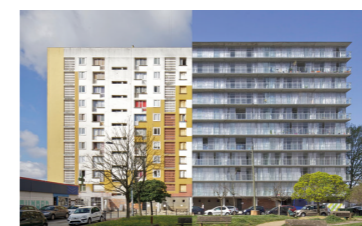
CLT based in Brussels, formed to fight speculation and create added value to housing. Today, the CLTB has a project of 9 housing units, 6 projects in progress and 6 others under study.



Housing upgrading

Expansion of housing unit

By expanding enclosed area of existing housing area all units simultaneously get additional space for starting economic activity, increasing number of inhabitants or merging into communal living.

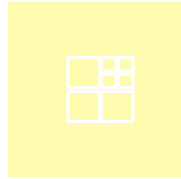


Lacaton & Vassal, Bordeaux

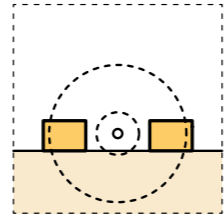
Housing block was expanded by offsetting the facade by 2.5m. This way inhabitants got precious personal space that is appropriated in various way

[fig.49] Tools for re-scaling

Public space



Commoning public space
 Participation and integration
 Decentralized management of flows
 Utilizing public space for collective benefit



Neighbourhood assembly

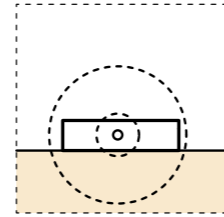
Neighbourhood assemblies

Form of self-governance based on direct democracy and inclusive decision making. Presents strong instrument of participation and political integration of inhabitants.



Assemblies, Madrid

During housing crisis in 2008, and up until now assemblies ensured protection and informing of inhabitants on their rights. At the same time this strong platform for mobilization and solidarity resulted in M15 movement, current city government



On site coordination space

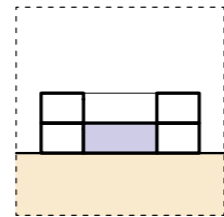
Action group coordinating

All political and urban processes need coordinating bodies to manage them. Those that need bottom up support are the best when they are locally managed by group of professionals working, educating and negotiating processes on site.



The Afrikaanderwijk Coöperatie, Rotterdam

shows the power of Rotterdam Zuid by investing in involved residents and entrepreneurs. This project runs as (Co)Operative since 2013.



Block filled with communal spaces

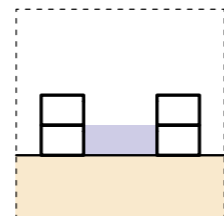
Collectively used courtyards

Inner space of blocks can be place of collective activities on the level of the one or few buildings. This can have temporary character i.e. grill party but also permanent i.e. collective food garden or repair workshop.



French quartier, Tubingen

In this neighbourhood inner courtyards are designed and used collectively according to agreement of inhabitants.



Street claimed by collective activities

Street as space of collective actions

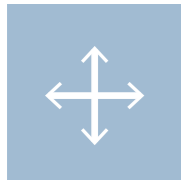
Eliminating cars from streets would open new imaginaries for using them. They can become space with new forms and functions, space of festivity, communal on the level of block etc.



Safety and quality of urban space

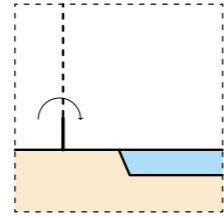
Here, instead of example, the highlighted values is safety of space for children. Architects dealing with collaborative planning say it is more important than amount and quality of collective and communal spaces.

Mobility

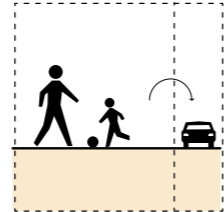


Restructuring mobility

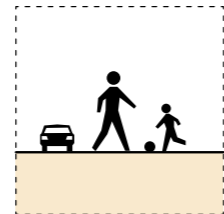
- Limits for motorized traffic
- Parking space reduction
- Soft mobility
- Enforcing the river as infrastructure



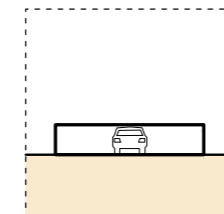
Opening waterfront



Car free zone



Shared space



Car sharing

Making waterfronts public

Waterfronts are potential and powerful spaces. Their generating potential can be fulfilled only through making them public for walks, public transport, fishing etc.

Car free zones

Zones in the urban areas where presence of motorized vehicles is restricted only to delivery and interventions. The future of public space.

Shared space

Shared space is an urban design approach which seeks to minimise the segregation of pedestrians and vehicles. This is done by removing features such as kerbs, road surface markings, traffic signs, and traffic lights.

Car sharing

Car sharing can be provided through centrally owned companies or through platforms for collective owning. Reducing number of personal cars would improve the standard of public space significantly.



Park fiction, Hamburg

This professionally initiated project of the park became known example of bottom up design opposing growth based urban development in the area.



Turku area, Finland

Car free zones are core concept of short distance cities. They are common in countries of Europe's north. In this example they are part of central shopping area.



Drachten, Netherlands

This is where the concept of shared space was pioneered by transport planner Hans Monderman. The small Dutch town has almost no traffic lights and also placed a children's playground in the middle of one of its street to slow down traffic.



Public car sharing programme, Sidney

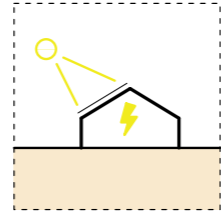
26 000 residents and companies are using some form of this public programme that provides shared cars on 26 locations in the city.

Local production



Rethinking local production

- Local resources management
- Using city as source of goods
- Waste management
- Limiting pollution through recycling



On site energy

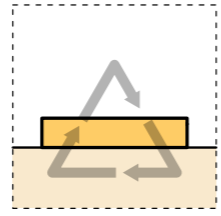
Distributed generation

Solar panels, wind turbines, biomass etc. Except being environmentally sustainable this form of distribution of energy regulates demand and implies reduction of energy losses.



Reci:klaonica, Zagreb

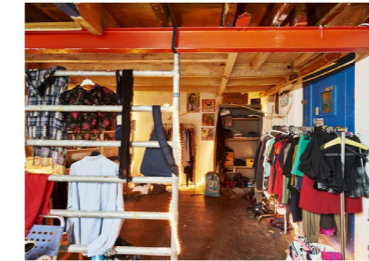
This radical off grid community produces it's own electricity, uses large batteries to optimize peak hours, fills its demand for water from recycling rain and uses only to do all of that.



Recycling facility

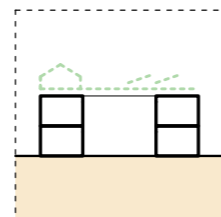
Recycling gardens and labs

Although already quite explored and upscaled the flow of recycled goods is still not supported by sufficient infrastructure equally distributed in the city's districts.



Give away shop, Poortgebouw, Rotterdam

Once a week this take or leave clothes shop opens for people to recycle clothes. It also serves as basis for collection of clothes for refugees etc.



Utilized roof

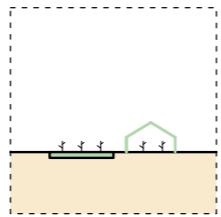
Using roofs for production

Either we talk about solar energy or food production or even drone based recycling compound roofs hinder great potential for implementation of these facilities as standard to each housing or office block.



ORKZ, Groningen

250 members community uses roofs of its building for production of food and other necessities partially covering needs of collective restaurant they run.



Gardens and green houses

Gardens and green houses

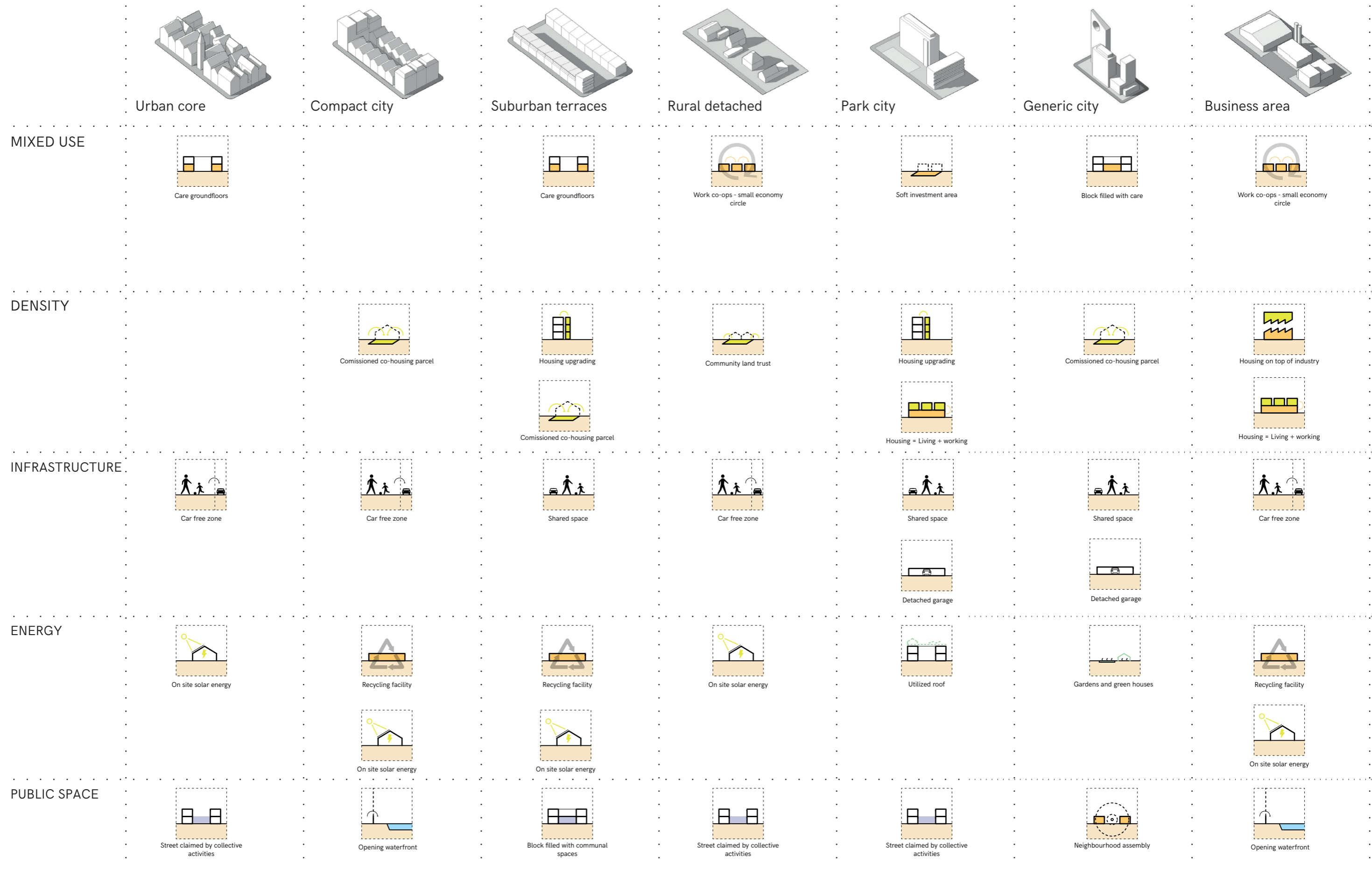
Numerous more or less successful examples of urban food production just prove that there could be more, that it should be stimulated and that it can easily become standard of the housing blocks.



Organoponicos, Cuba

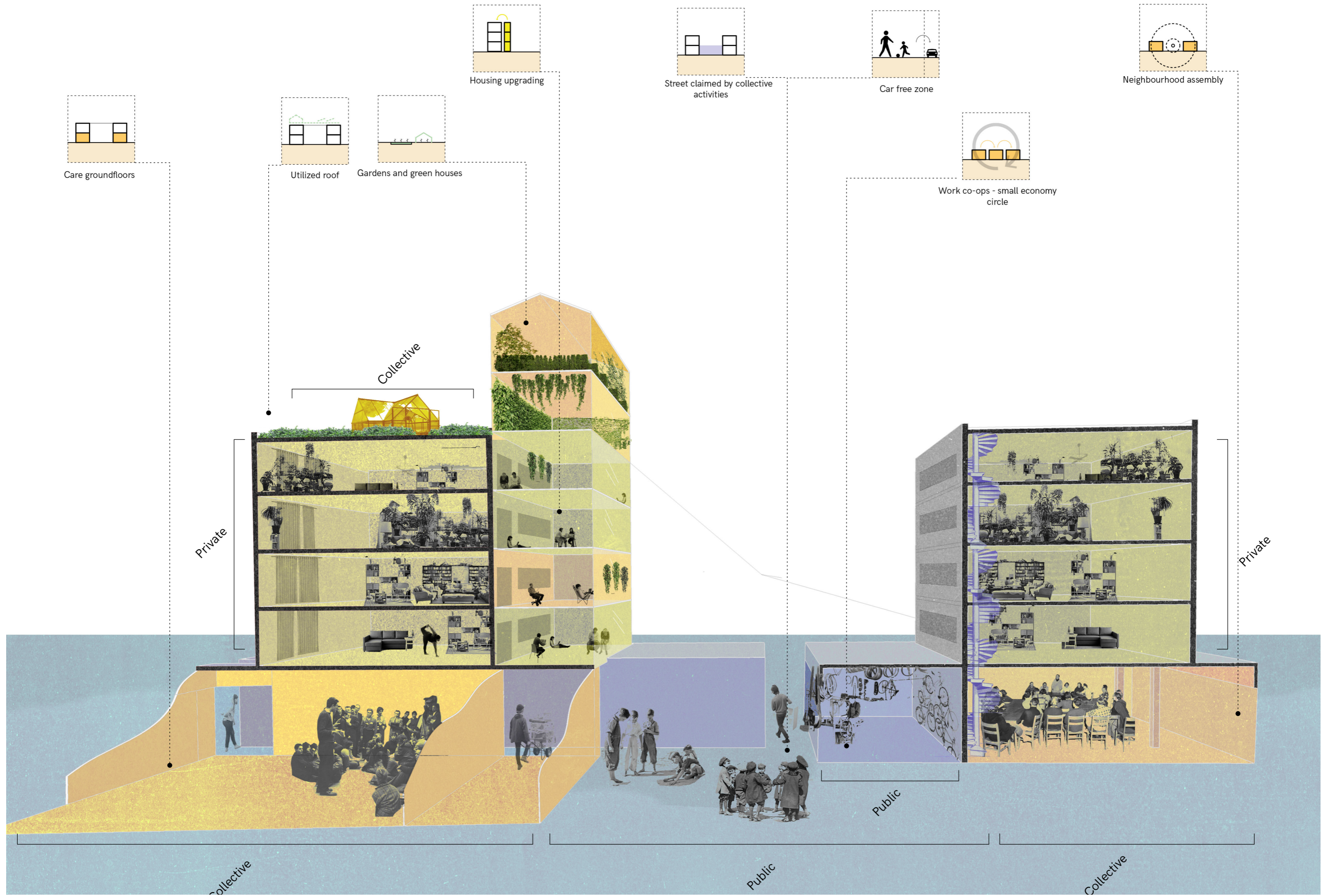
After embargo cubans started program of production of food in their neighbourhoods. At that point crucial move to save people from famine today is just partially alive.





[fig.52] Toolbox acording to 7 generic urban types

[fig.53] Axonometry of De-growth unit divided by levels of governance



7.1.3. Governance model

Transition has to happen parallelly with existing forms of urban life not against them (as long as they are willing and able to contain refrain from endless consumption and expansion).

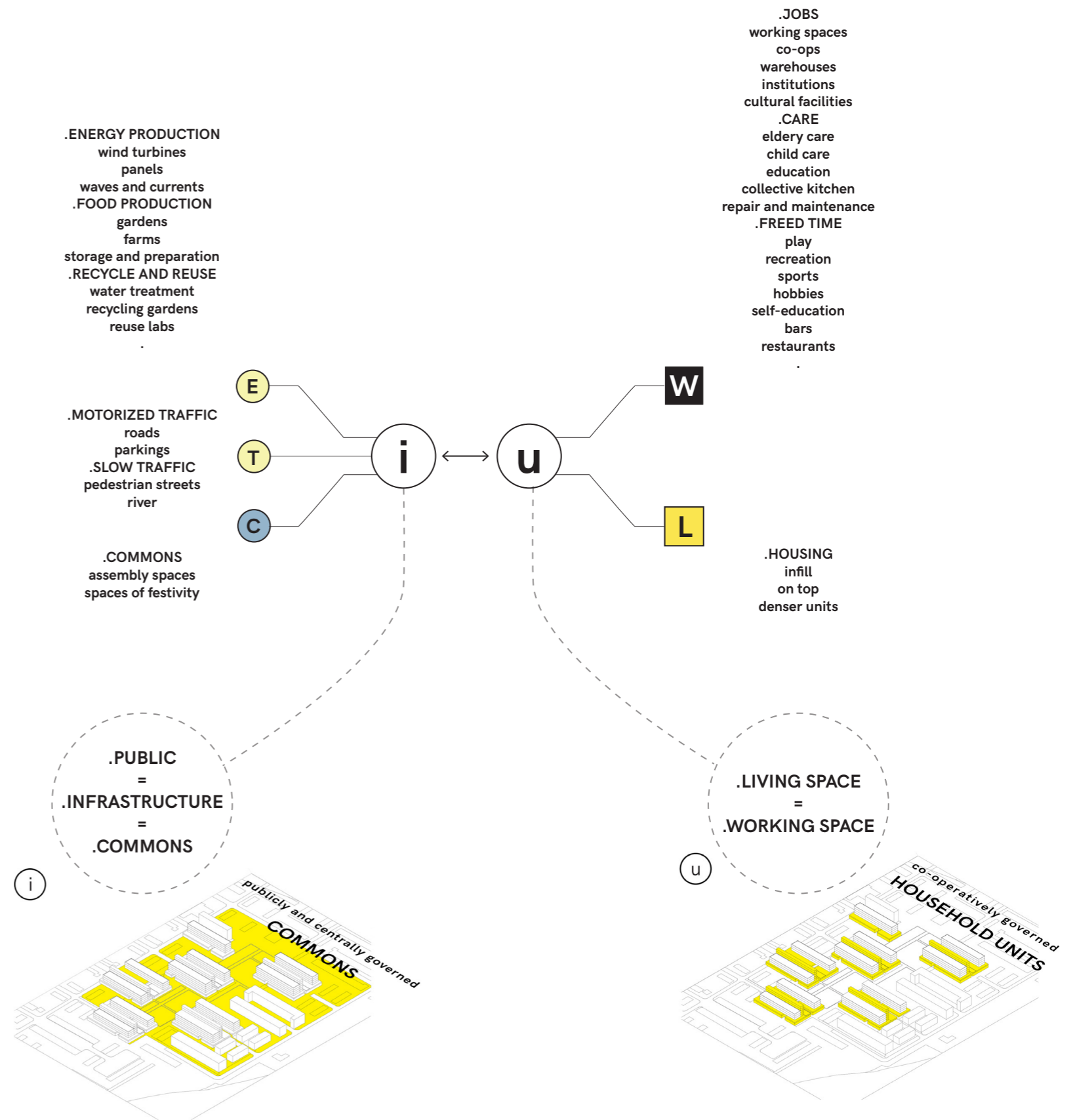
The capacity of urban fabric to contain tactics for transition of socio-economic relations depends heavily on paths and patterns of mobilisation in local and municipal level. For this reason it is important to draw clear distinction between spaces and flows governed and design as common and spaces that are collective or private and therefore governed in decentralized bodies. [fig.54] So proposed model of governance divides two scales of governance. [fig.55] One is scale of the group of households that I gave name Unit. The group of household is physically embodied and tied to traditional set of relations ie. property, real estate value, using rights, working hours etc. They make their decisions via neighbourhood assemblies or committees. Examples of this that can be inspiring are neighbourhood assemblies in Madrid, Barcelona and other Pirinean cities that emerged after housing crisis in 2008. Today pioneers of this movement are sitting in municipal governments promoting and creating legal framework for stronger neighbourhood assemblies.

Other scale of governance is municipal and regional scale of central public bodies in charge of planning, maintaining and developing distribution of resources in environmentally responsible way. They are

in charge of urban metabolism and coordination of polycentric system of neighbourhood governance.

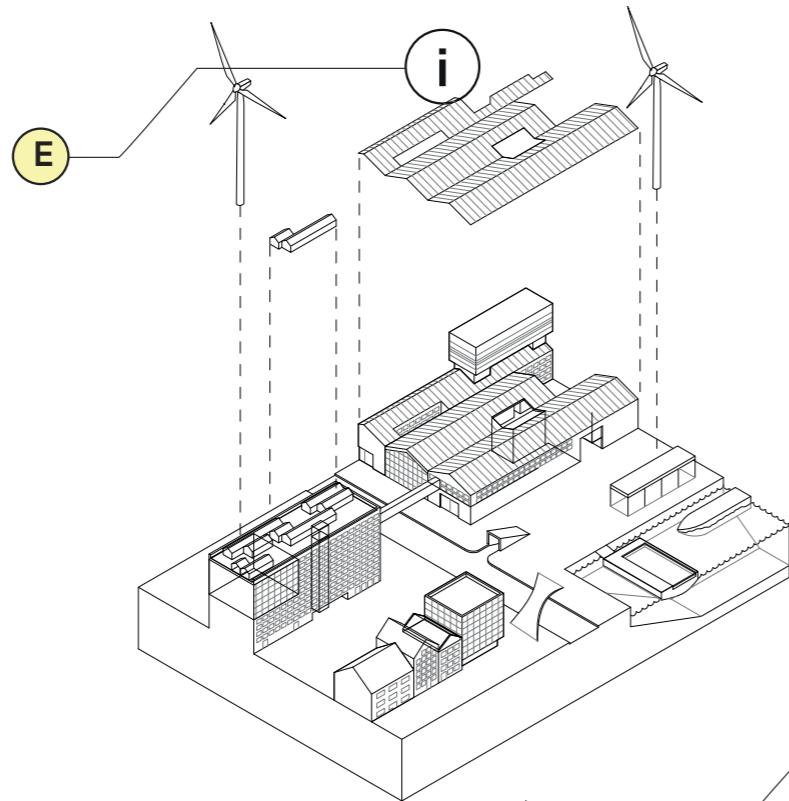
The process of implementation could work gradually with test cases in few blocks and neighbourhoods and by step-by-step releasing central municipal governance of its responsibilities and re-directing them to districts and neighbourhoods.

In order to create necessary feedback between two scales, on site action groups of De-growth experts as well as urban planners, social workers, negotiators etc. should work to inform locals and officials about the flow of decisions, plans and powers.

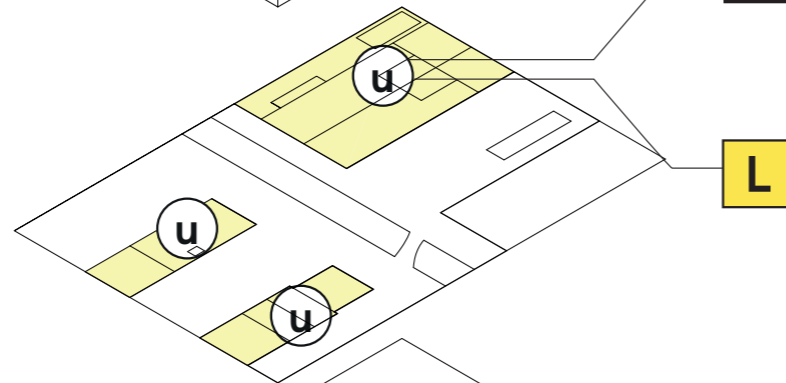


[fig.54] Illustration of De-growth city's governance system

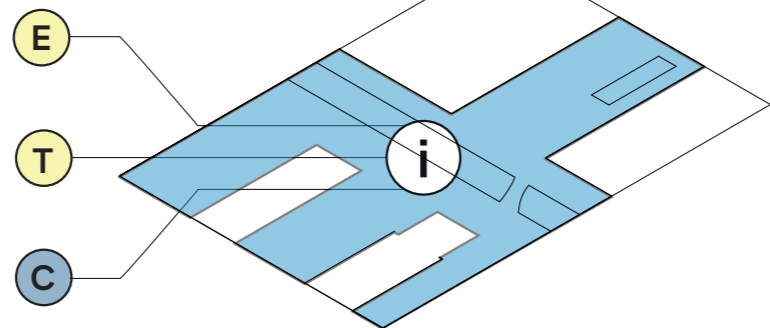
.ENERGY PRODUCTION
wind turbines
panels
waves and currents



.FOOD PRODUCTION
gardens
farms
storage and preparation
.RECYCLE AND REUSE
water treatment
recycling gardens
reuse labs



.MOTORIZED TRAFFIC
roads
parkings
.SLOW TRAFFIC
pedestrian streets
river



.COMMONS
assembly spaces
spaces of festivity

.JOBS
working spaces
co-ops
warehouses
institutions
cultural facilities
.CARE
elderly care
child care
education
collective kitchen
repair and maintenance
.FREED TIME
play
recreation
sports
hobbies
self-education
bars
restaurants

.HOUSING
infill
on top
denser units

ENERGY

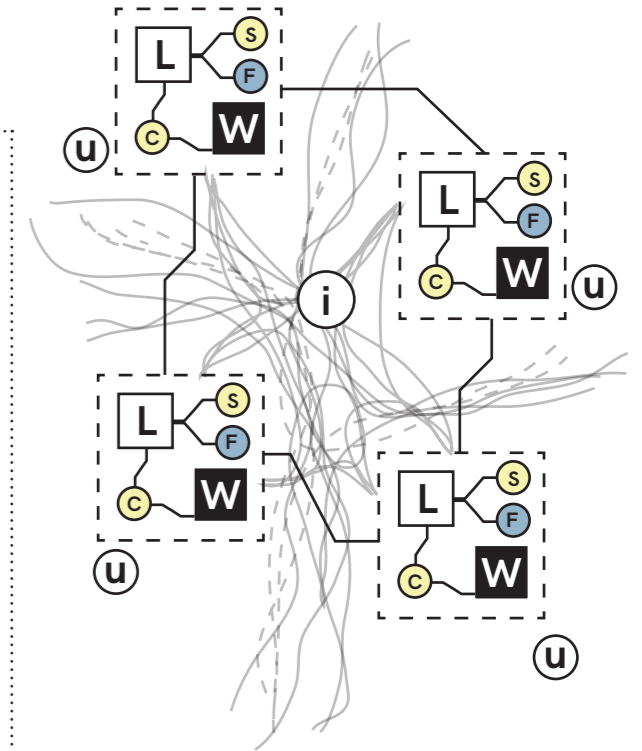
HOUSING UNITS

ACTIVITIES
(JOBS, CARE&FREED TIME)

LIVING & WORK

PUBLIC SPACE & INFRASTRUCTURE

[fig.55] Illustration of De-growth city's spatial system



[fig.56] Illustration of De-growth city's spatial elements according to governance

7.2. URBAN LEVEL

What is capacity of existing urban morphology for achieving De-growth goals?

POLITICAL
[ACTIVIST] FIELD
SOCIAL
ART

NACH
BARN

GWA

GOLDEN
PUDEL
KLUB

T. PAULI
KIRCHE

NACH
BARN

PARK
FIC-TION

S. PAULI
KIRCHE

NACH
BARN

HAFEN
STRASSE

NACH
BARN

KINDER
HAUS

7.2.1. Example - Tübingen & „Baugemeinschaften“

Development

French Army leaves in 1991

Urban development area
„Französisches Viertel-Stutt-
garter Straße“

The City buys the ground and
leads the development

1995-1997-1998 First
Projects

Since 1998: Priority for
Baugemeinschaften

~160 BG Projects finished

Today 4.000 inhabitants,
1.200 jobs



[fig.65] Images of neighbourhood

Urban structure:

- ▶ Blocks
- ▶ Clear division of public and private
- ▶ Courtyards



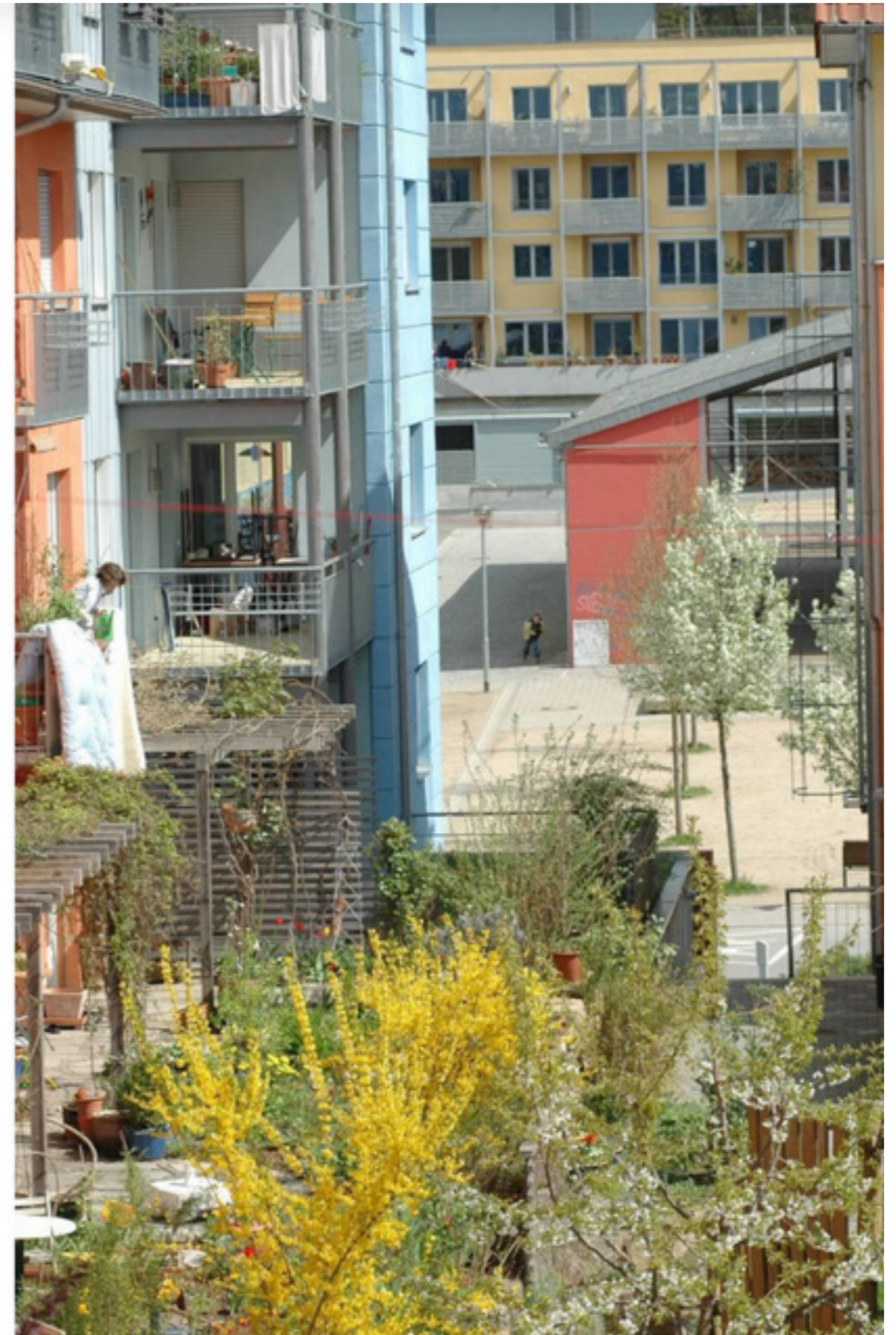
Small Scale – Mixed Use

- ▶ Ground floor has to be used for shops, workshops, offices...
- ▶ Creating a lively and urban atmosphere, activity on streets
- ▶ Support the local economy



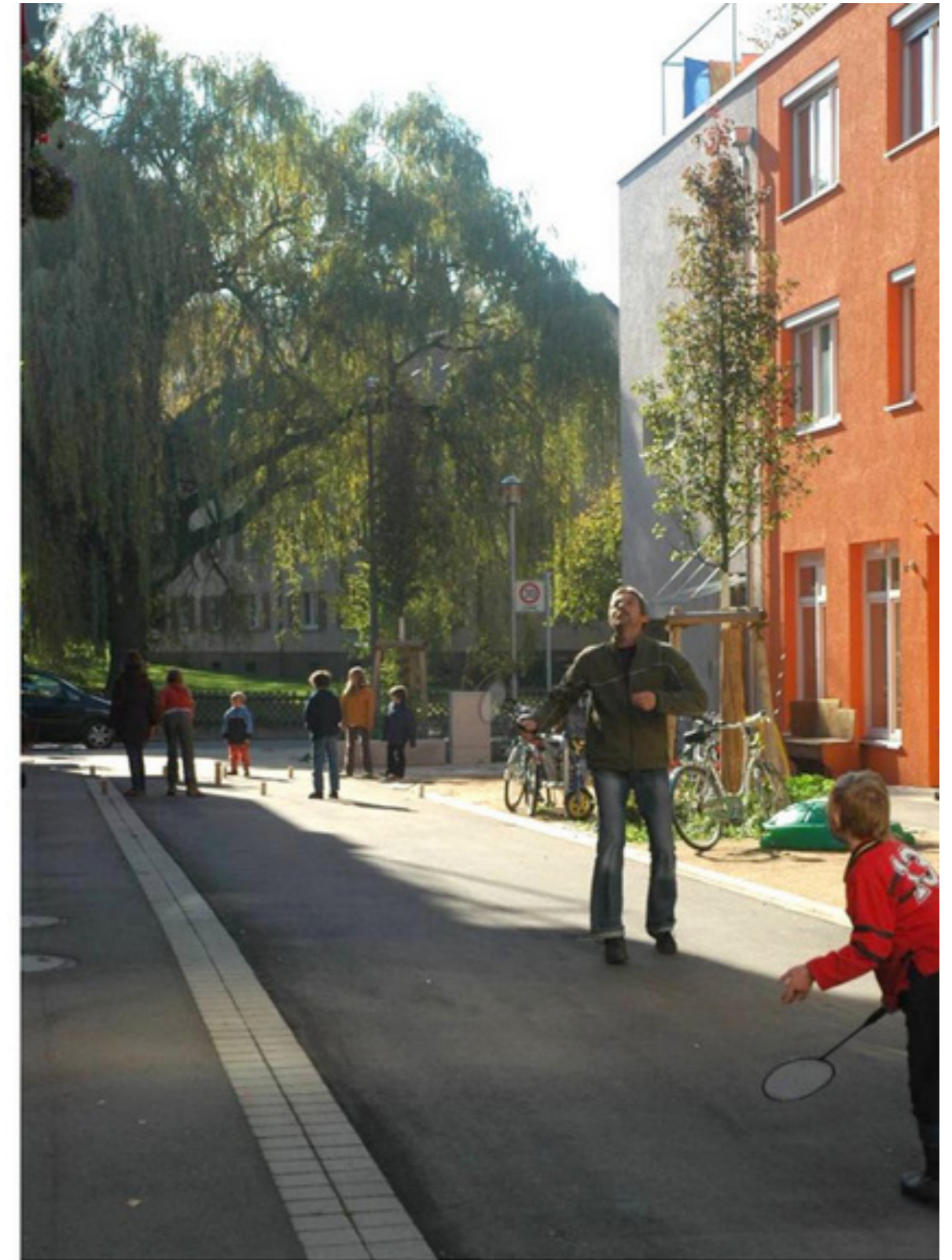
High urban density and integration of old buildings

- ▶ Creating an urban atmosphere
- ▶ Do not forget the past
- ▶ A City evolves through history – by the re-use of old buildings in a different way – it's cheaper



Public space and traffic strategy

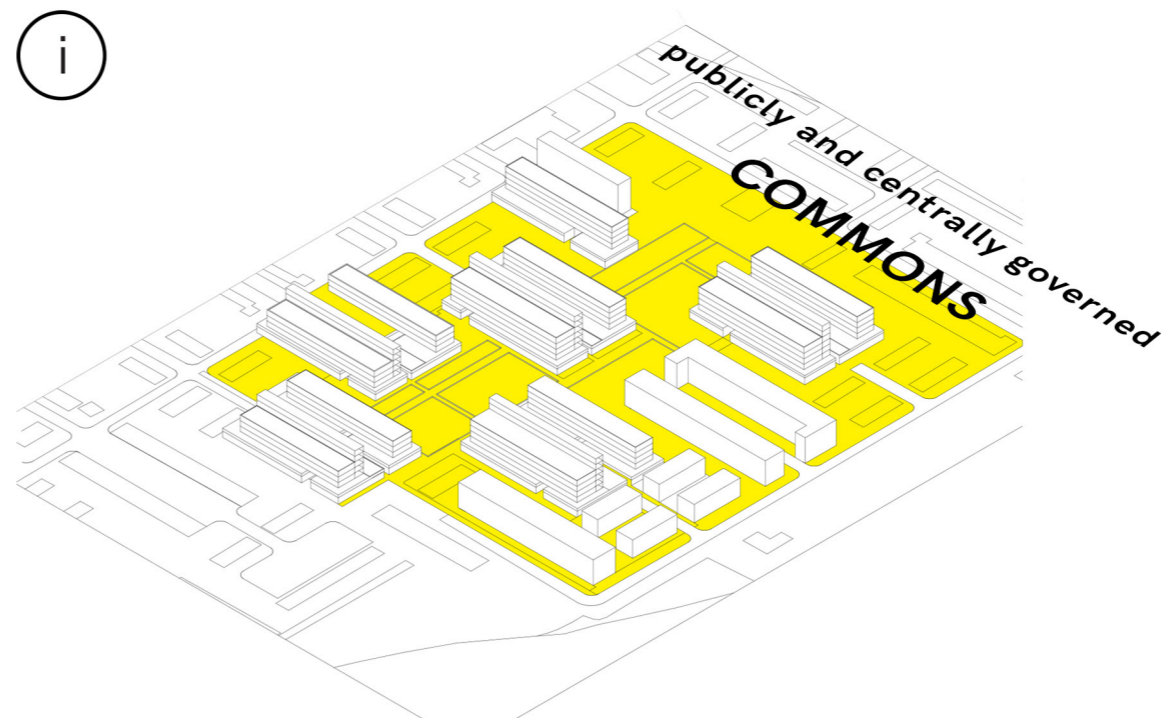
- ▶ Streets and squares as the „shared urban living-room“
- ▶ Peripheral Car Parking
- ▶ Bike, public transport, Car-Sharing
- ▶ 50:50 Public Space – Private Space



7.2.2. Implications on urban level

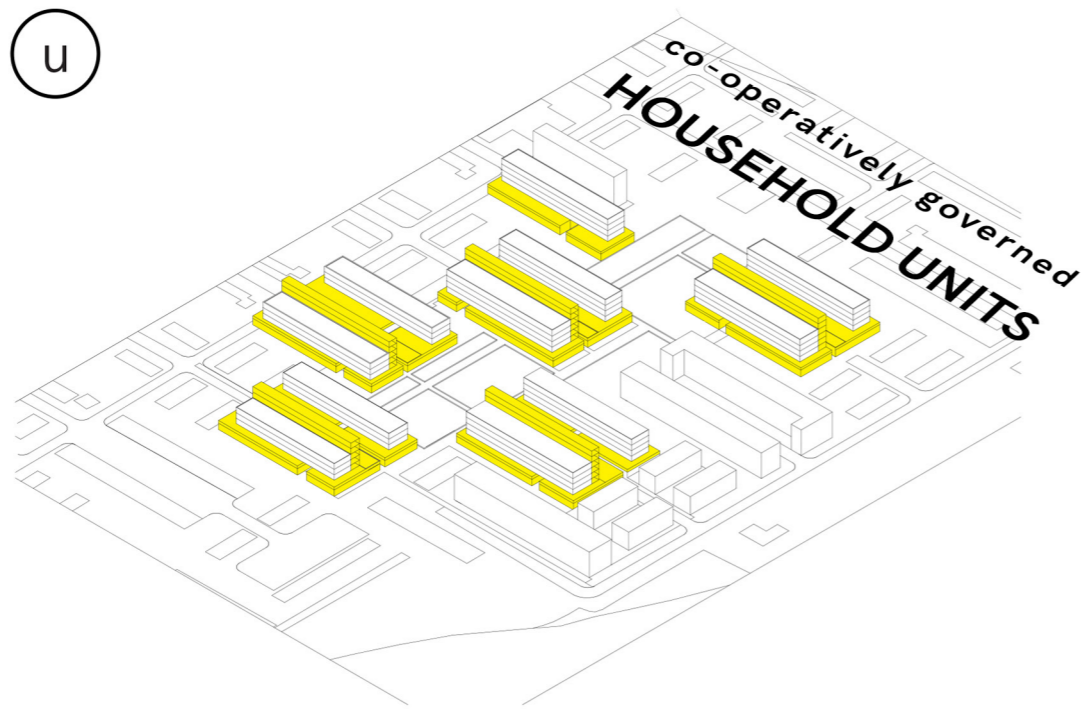
Open spaces are run as commons on municipal level and are used for production of energy, infrastructure and parking areas. These spaces are usually interscalar by size or function. For this reason they should be centrally governed by municipal government.

The map shows the potential spaces that could be used as future common source of energy, food, feed time etc. The De-growth challenges multi-scalar distribution of resources by socio-economic concept of Commons most closely described by **Elinor Ostrom**. From hierarchically organized public infrastructure open spaces have to work as poly-centric system of locations for social interactions that support local and circular economy.



[fig.57] Conception of commons
[fig.58] Map of potential commons in chosen strip of Rotterdam

u

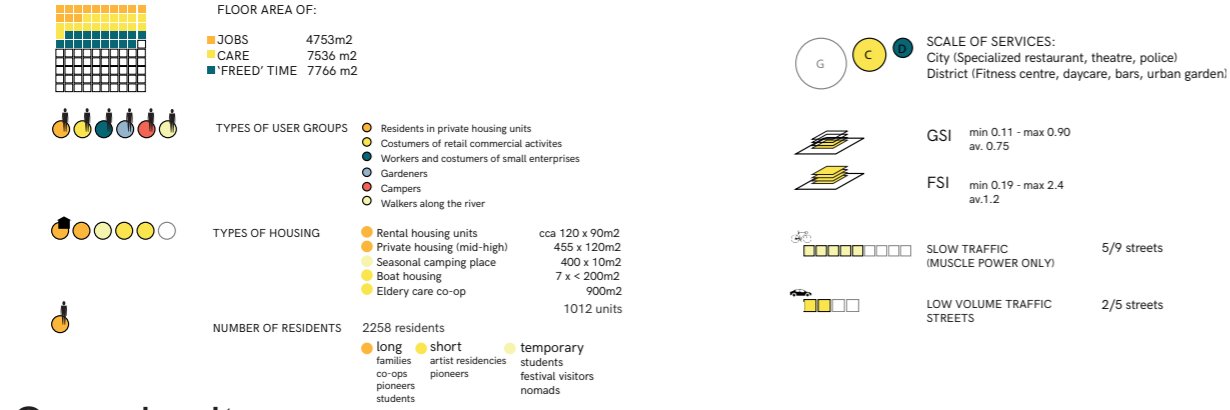
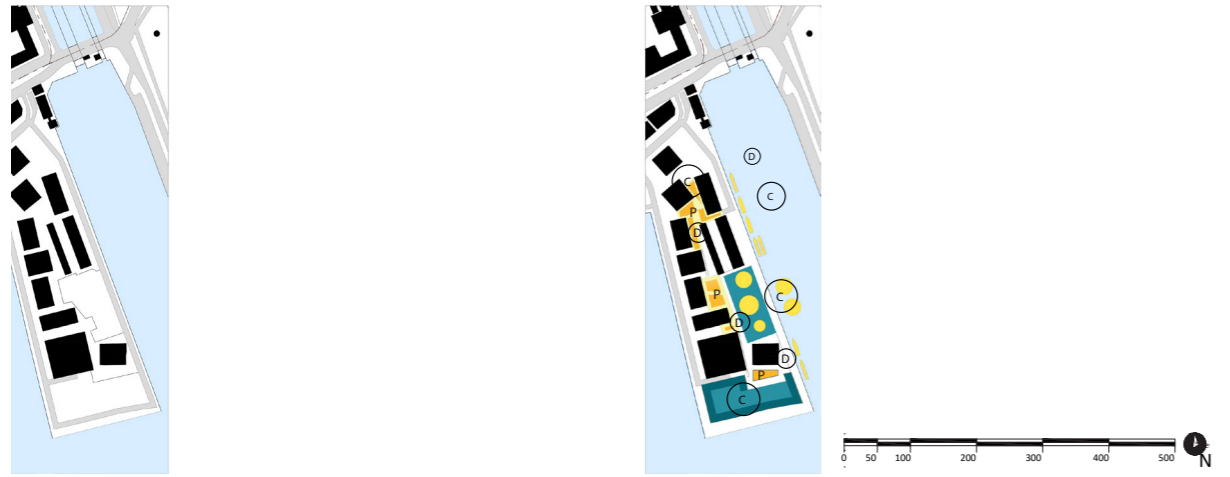


Groups of households are defined as living-working units collectively governed by representatives or assemblies and the yellow shows spaces for adoption to private or collective care and job providing facilities.

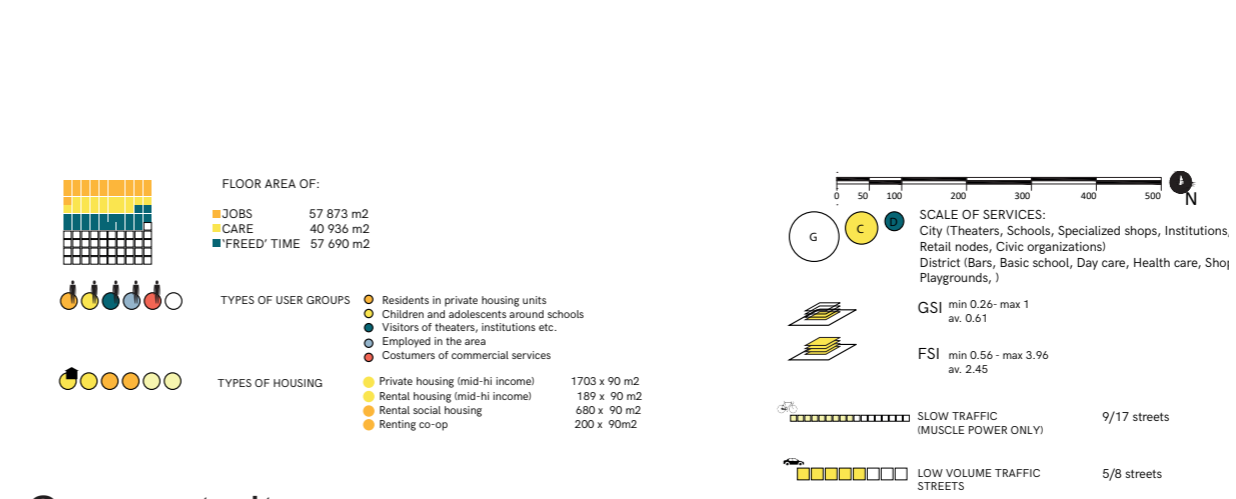
On larger map is shown the scenario with number of potential units that could emerge within existing urban fabric. In order to reduce demand for space and resources the city of De-growth should aim to recreate the denser city where densification of existing urban fabric happens within the certain frame based on Doughnut economy concept by [Kate Raworth \(2017\)](#).

In the De-growth scenario live-work relation has to be re-negotiated spatially. There is no need for distance between place of living and place of working in era of clean industry, automation, circular economy and search for new models of community (ie. Co-housing or co-operative work). Current islands of urban types with distinct mono-functional use have to be broken into interrelated patches of same urban types but with distinct substructure of functions.

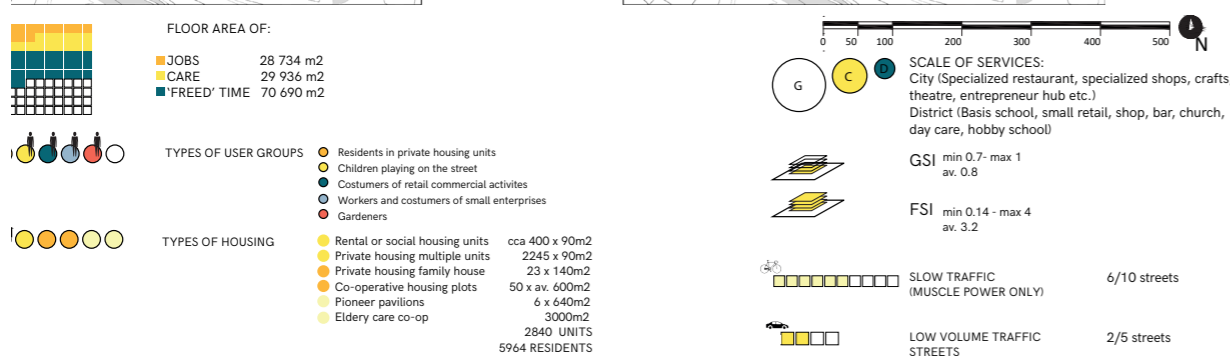
[fig.59] Conception of units
[fig.60] Map of potentially denser Rotterdam in chosen strip



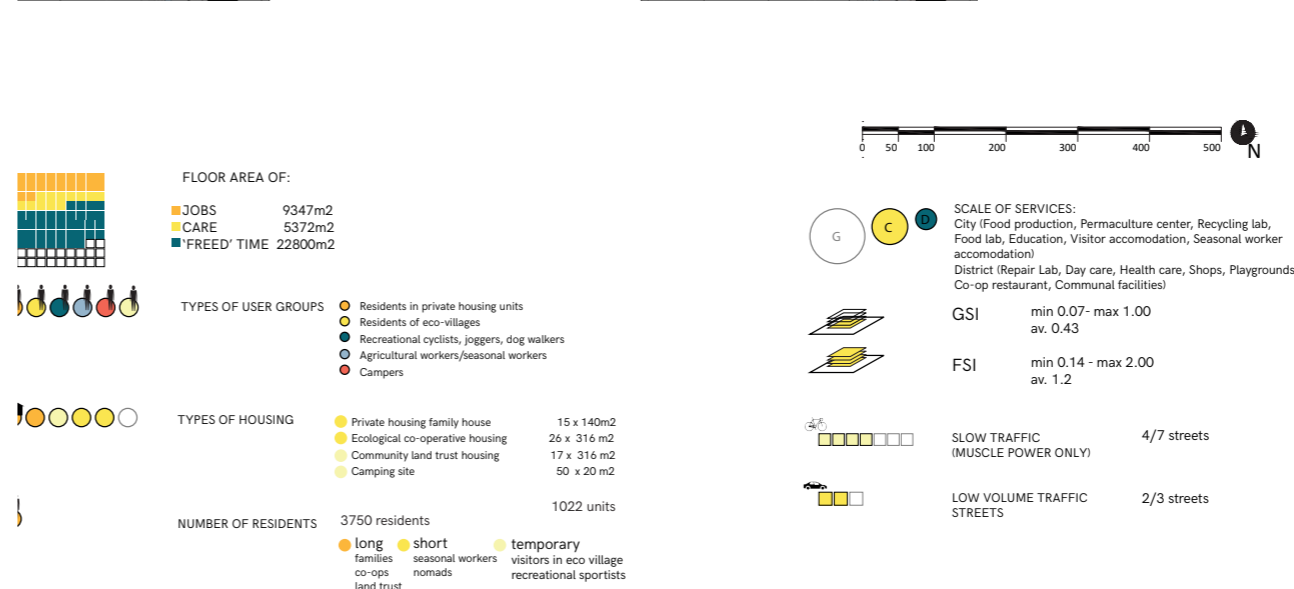
Generic city



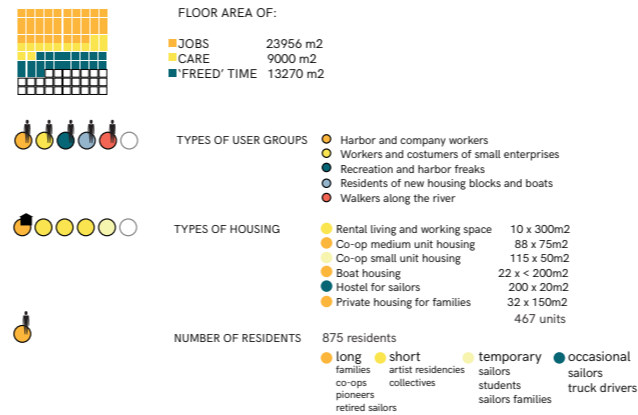
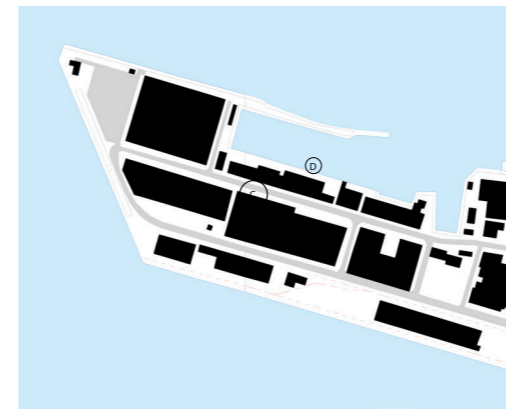
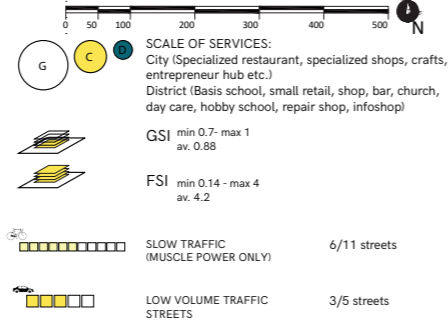
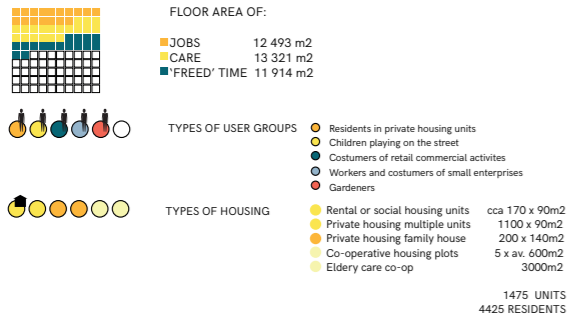
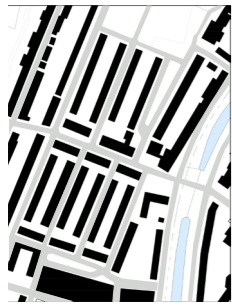
Compact city



Park city

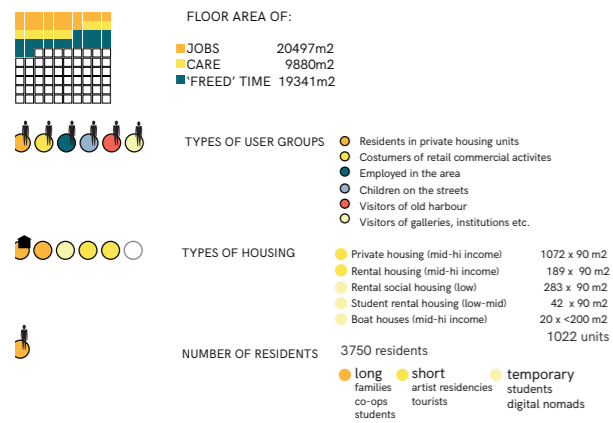


Rural detached area

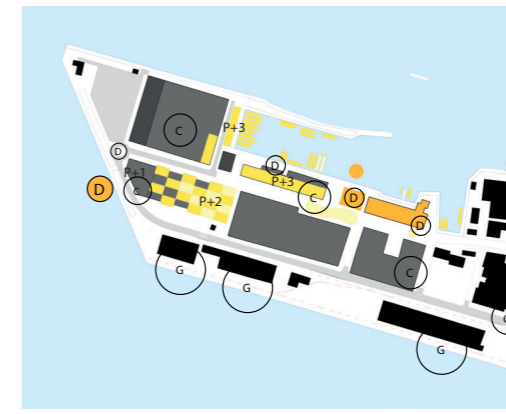


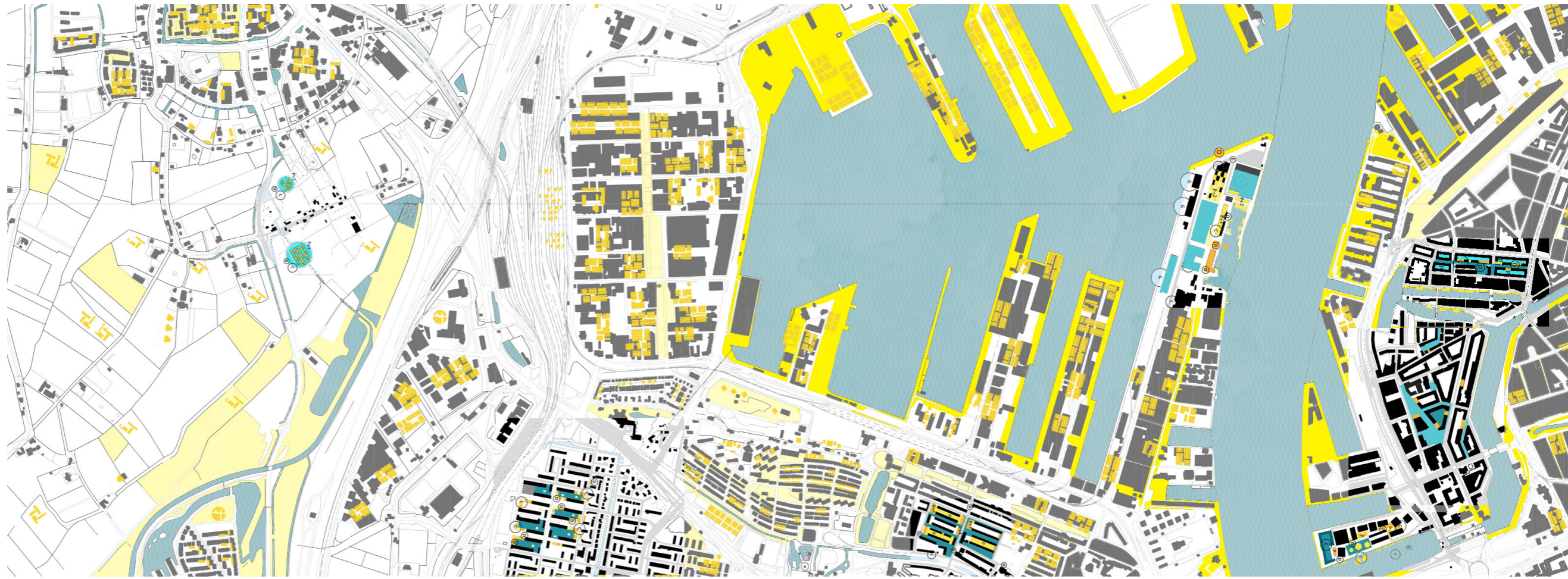
Business area

Subrurban terraces



Urban core



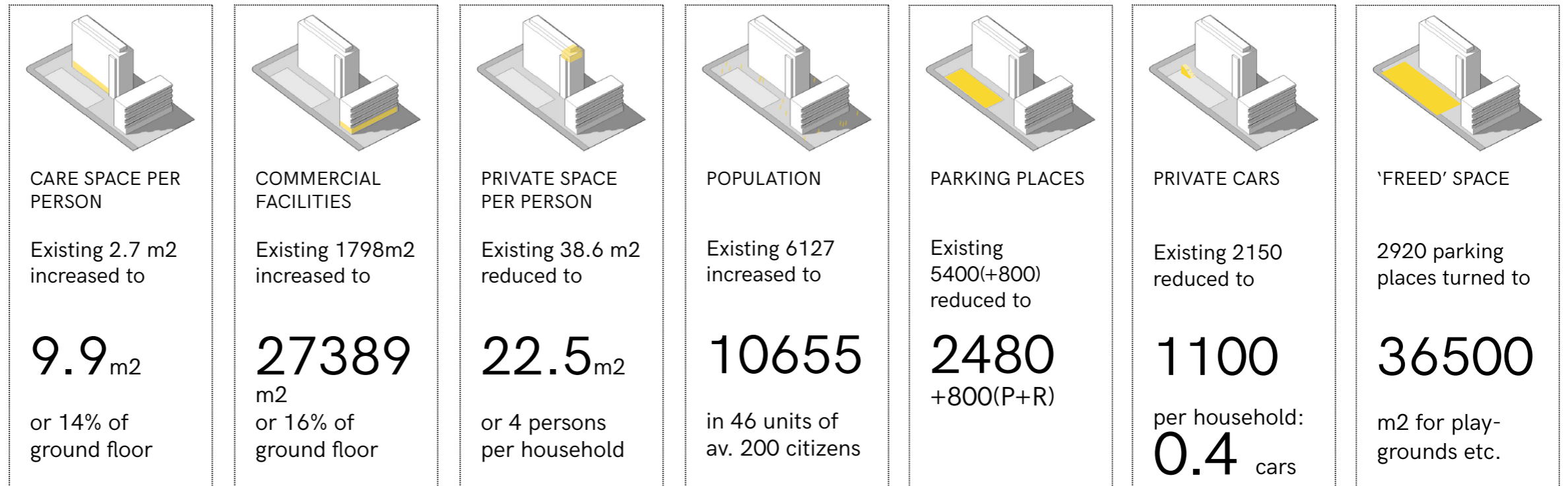


[fig.61] Map of Rotterdam's strip in scenario of De-growth

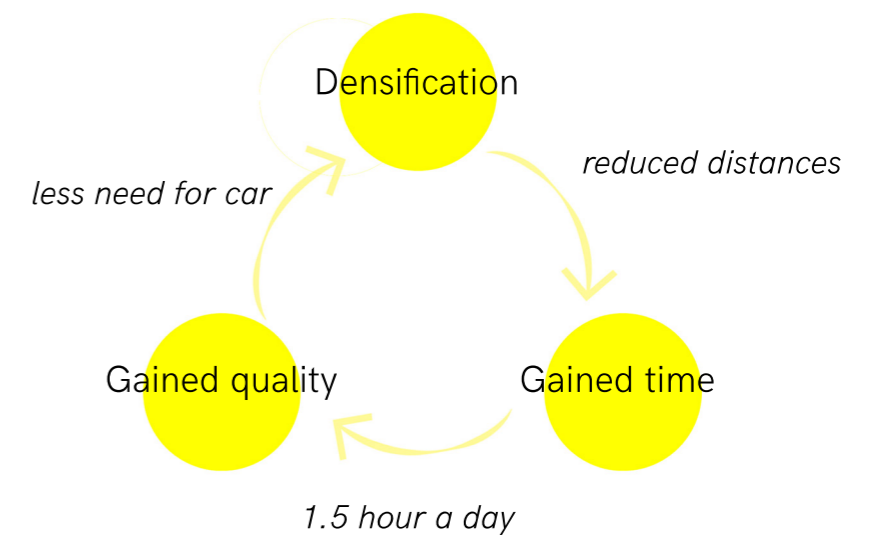


7.2.3. Quantifications on Pendrecht example

Average citizen of Rotterdam can gain back 1.5 hours of his day if instead of commuting s/he could work in the area of his home or at home. This time improves quality of life.

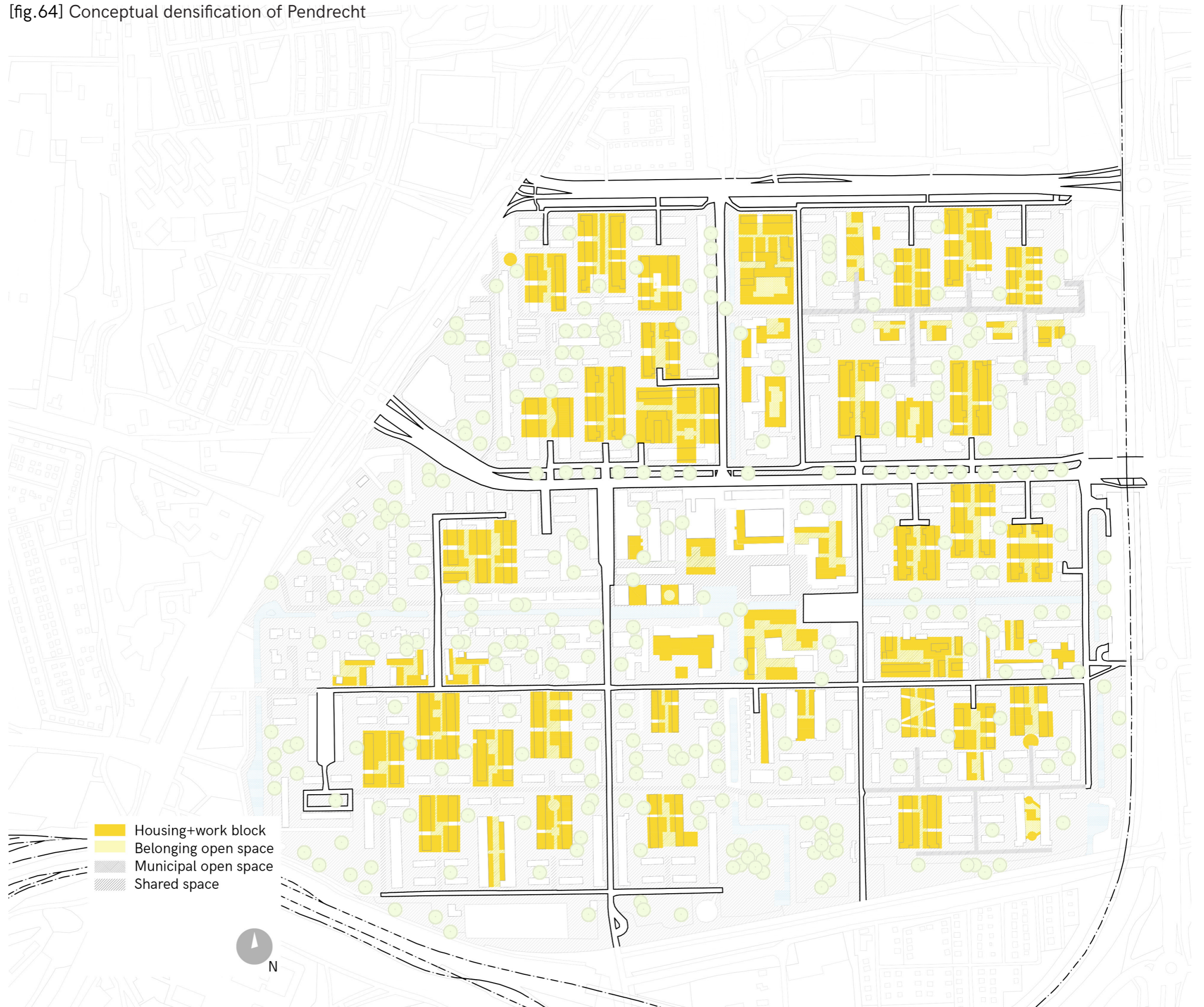


[fig.62] Quantifications of benefits of scenario one example of Pendrecht (4,8 km², 6000 inhabitants)



[fig.63] Example of benefit from densification

[fig.64] Conceptual densification of Pendrecht



7.3. NEIGHBOURHOOD LEVEL

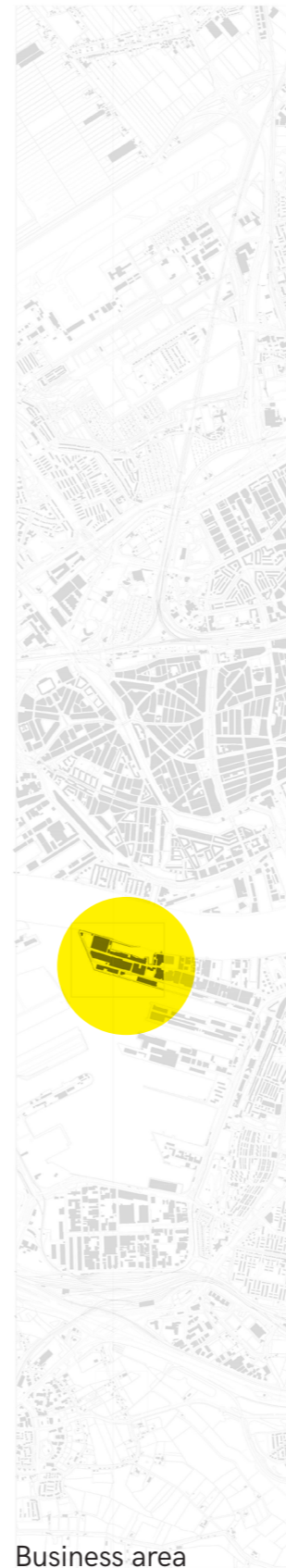
What is materialization, aesthetics and limits of De-growth city?



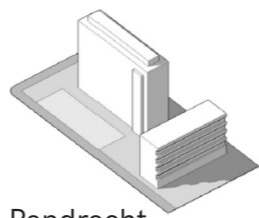
Test cases



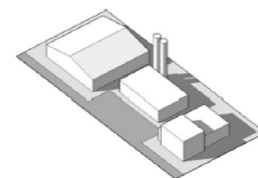
Park city



Business area



Pendrecht

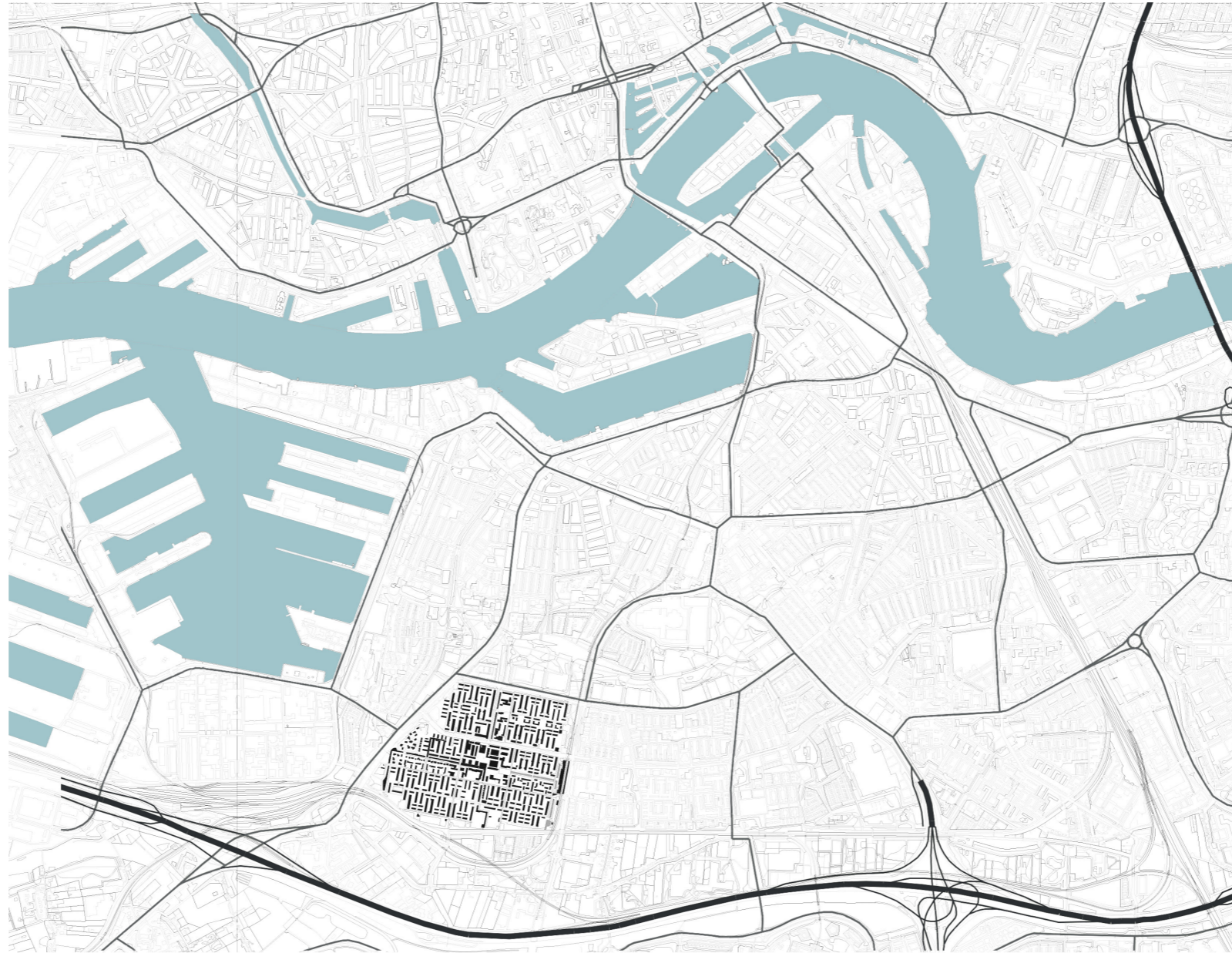


Waalhaven



7.3.1. Pendrecht

Pendrecht is a district in the south of the Rotterdam district of Charlois. Pendrecht was built in 1949, in the fifties.



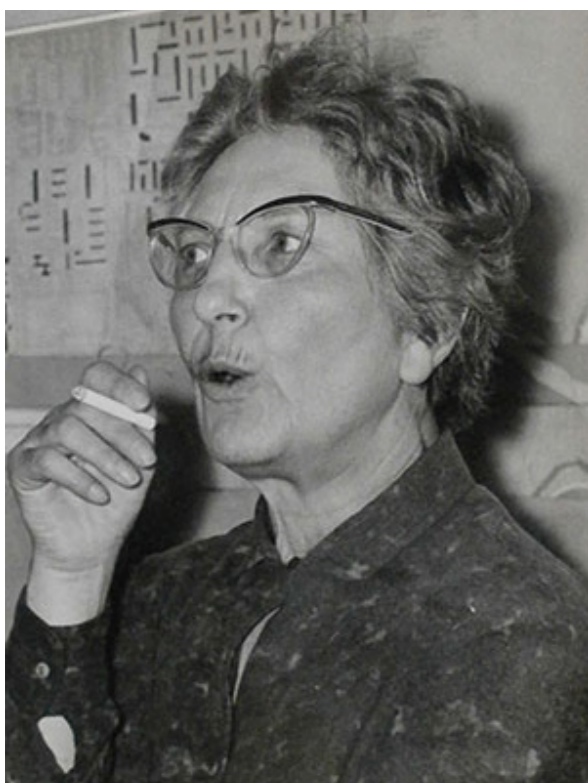
[fig.65] Location of Pendrecht in Rotterdam



The Rotterdam district of Pendrecht, built in the fifties of the last century, was designed by the well-known urbanist Lotte Stam-Beese. The neighborhood is made up of so-called residential units: a kind of stamp where different types of homes are built around a common garden. The neighborhoods, which consist 4 areas of residential units, are located adjacent to Square 1953, which forms the heart of the district. Characteristic is further the rectangular pattern: all streets are perpendicular to each other.

Pendrecht was built as a garden city: spaciouly constructed with wide streets and a lot of greenery. The open character was very special at that time, especially for a working class district. But times have changed. Like many post-war neighborhoods, Pendrecht also went a downward spiral, first slowly then faster. Especially in the years around the turn of the century,

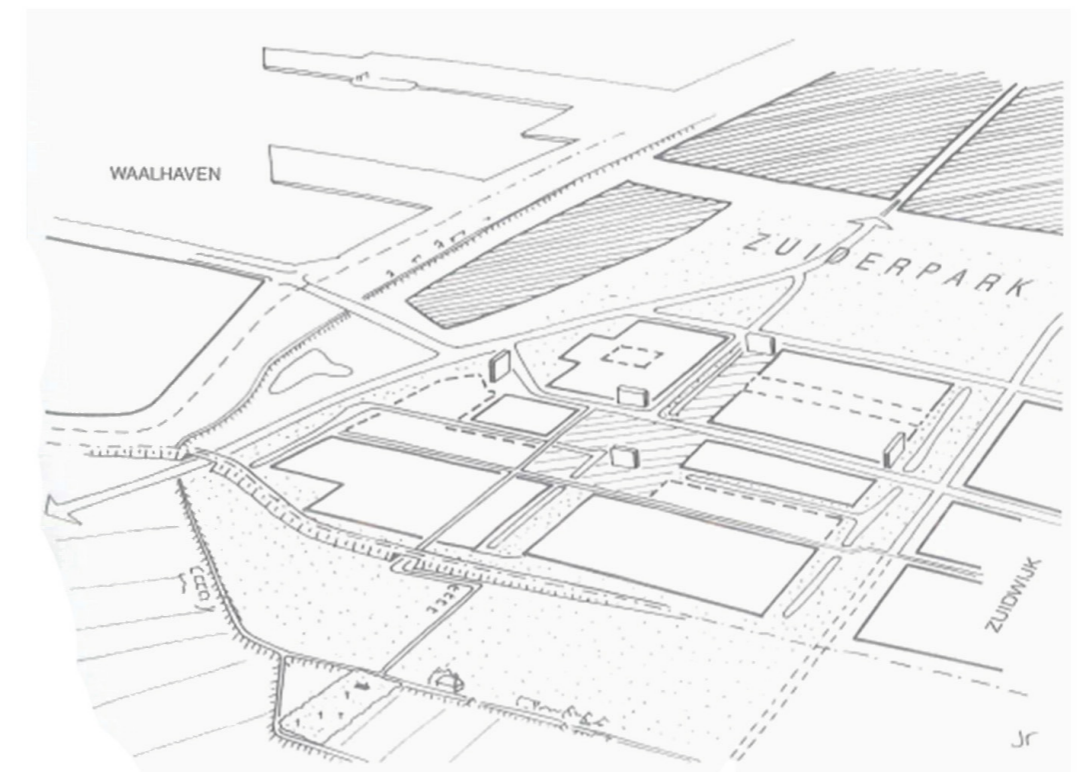
the impoverishment hit hard and Pedrecht became present in negative light in the news several times. In the nineties, a start was made to improve the outdated and unilateral housing stock. Some parts of the district are renewed. However, despite the restructuring, Lotte Stam-Beese's original set-up is still visible in many places.

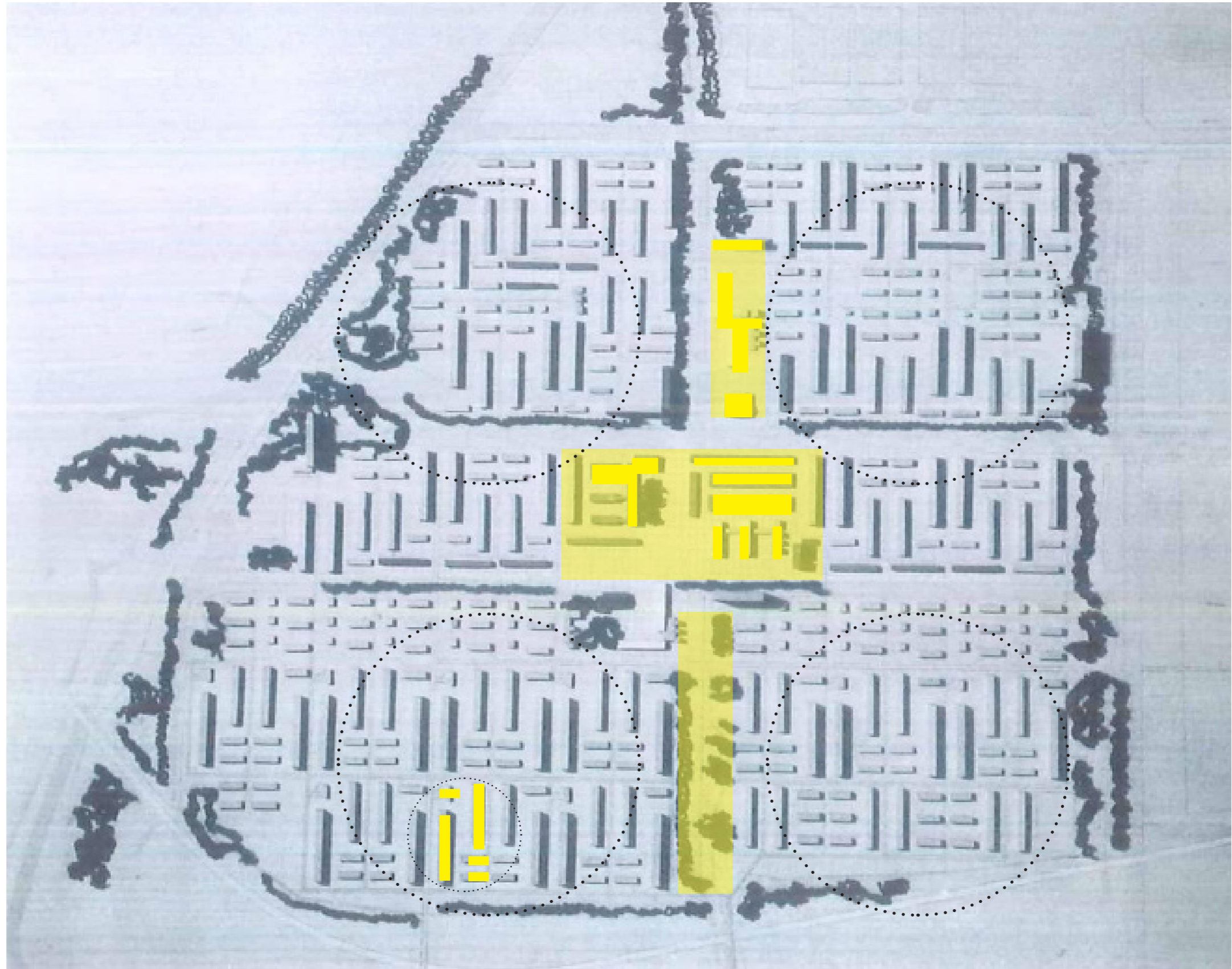


[fig.66] Lotte Stam Beese

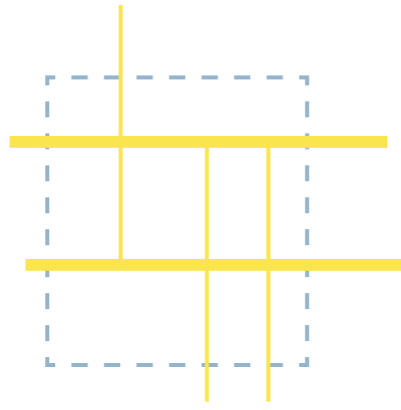


[fig.67] Design principles of Pendrecht



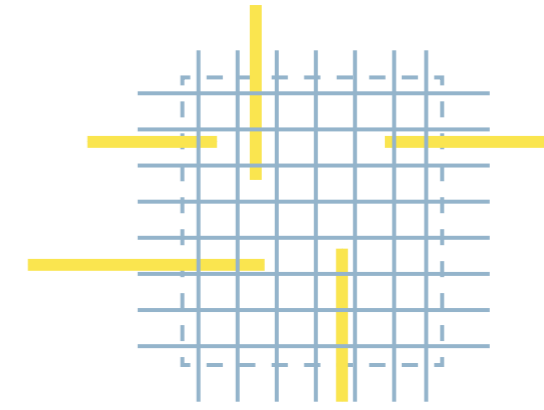


[fig.68] Design principles of Pendrecht: Center vs Periphery

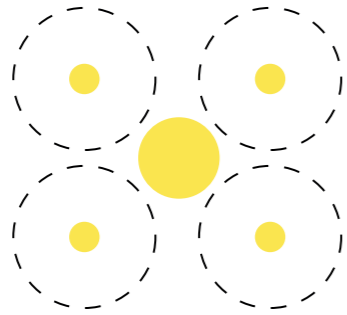


1 Road system of neighbourhood consumes large amount of space

>

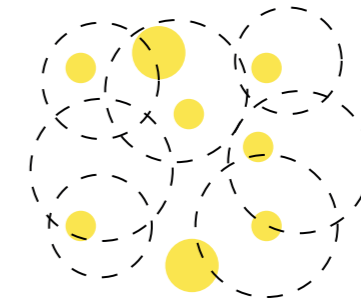


Implementation of pedestrian and shared streets

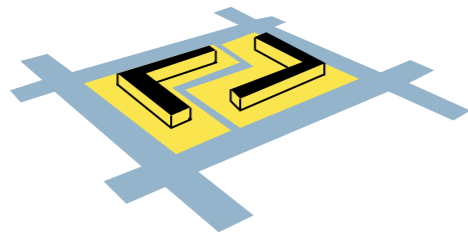


2 Hierarchical distribution of amenities results in monofunctionality

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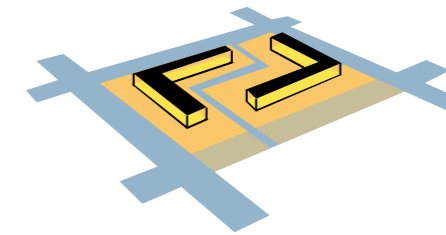


Opening space for new facilities in housing areas



3 Strict division of private and public space on the block scale

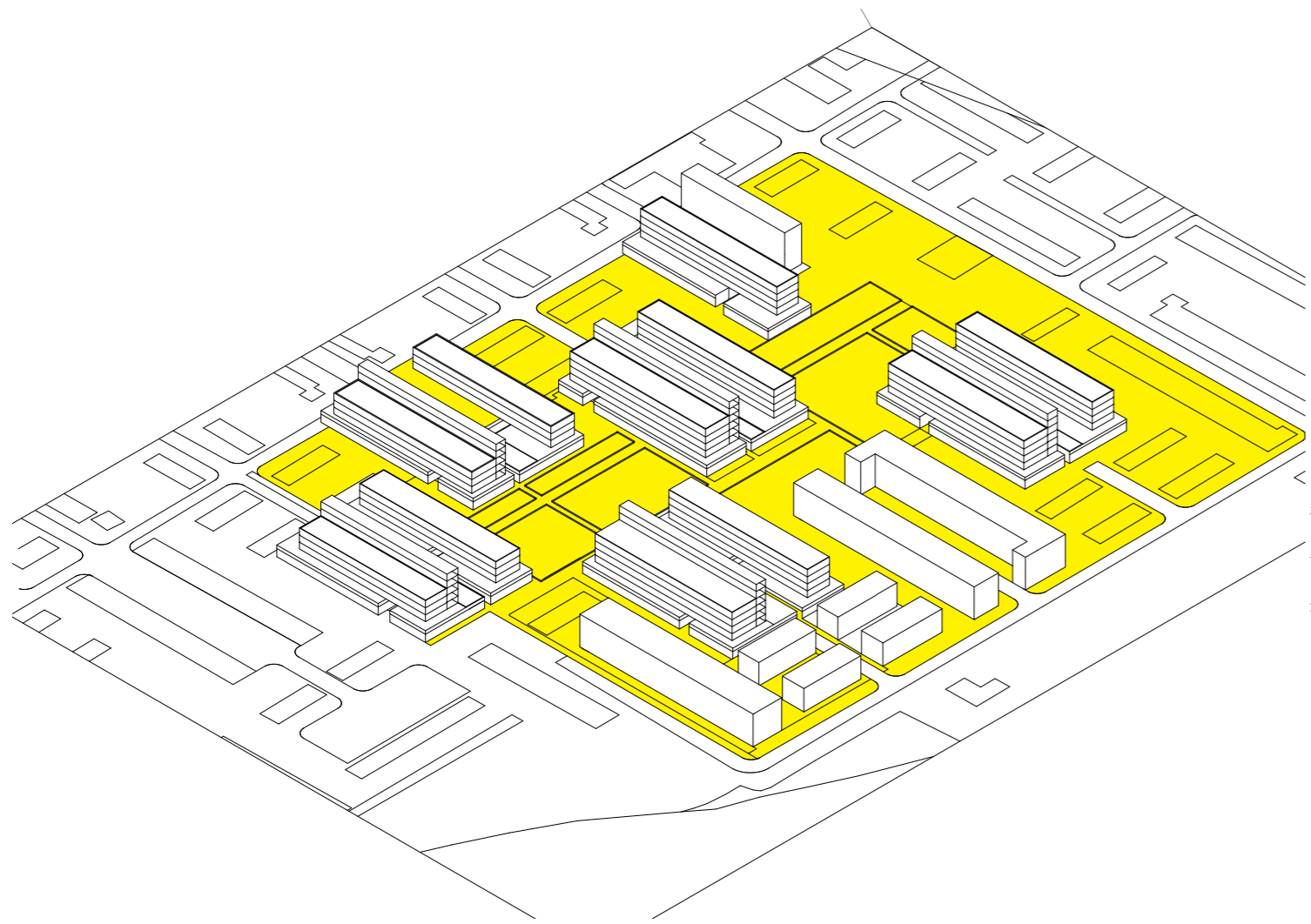
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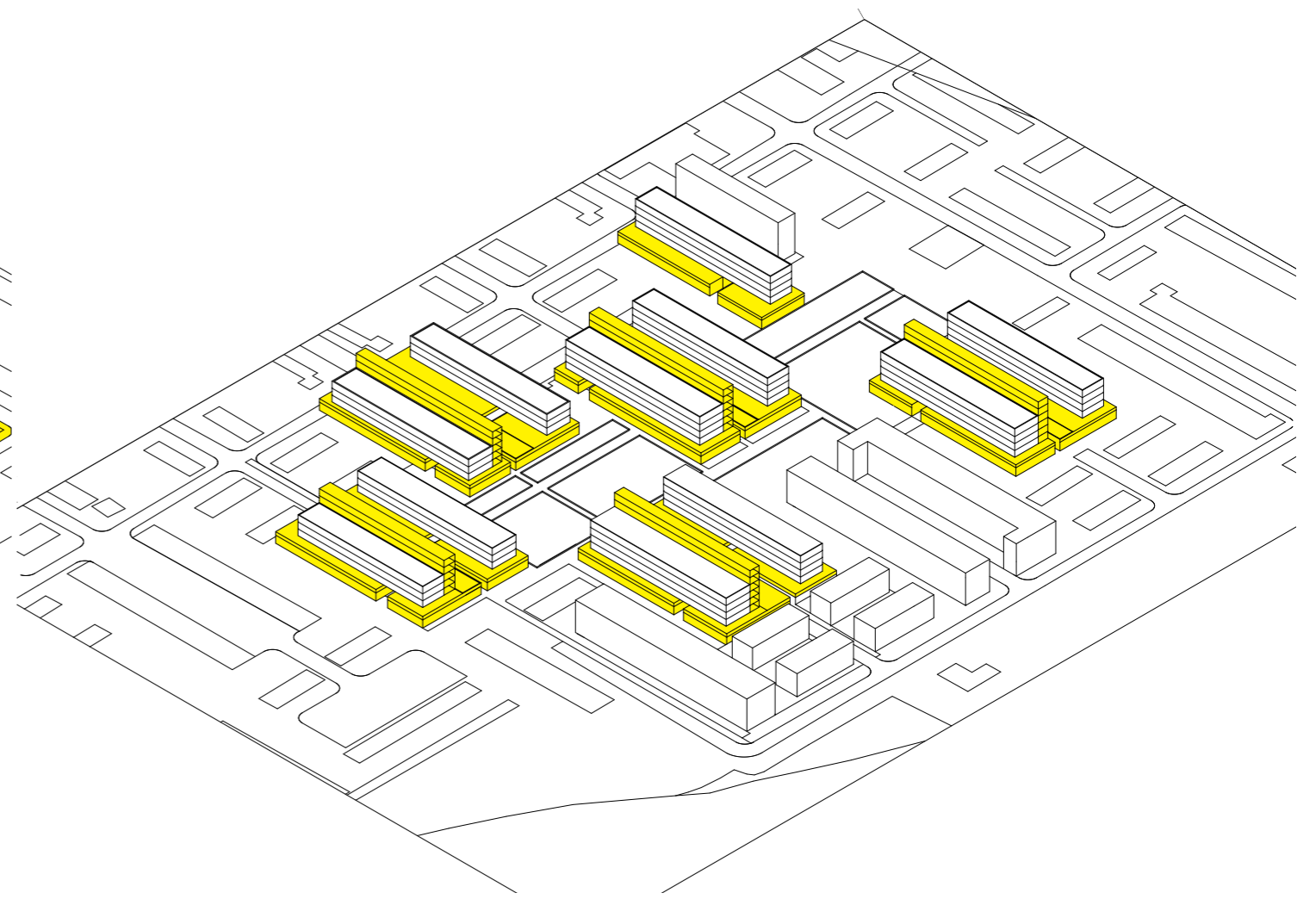
Implementation of buffer zones for collective activities, jobs and care



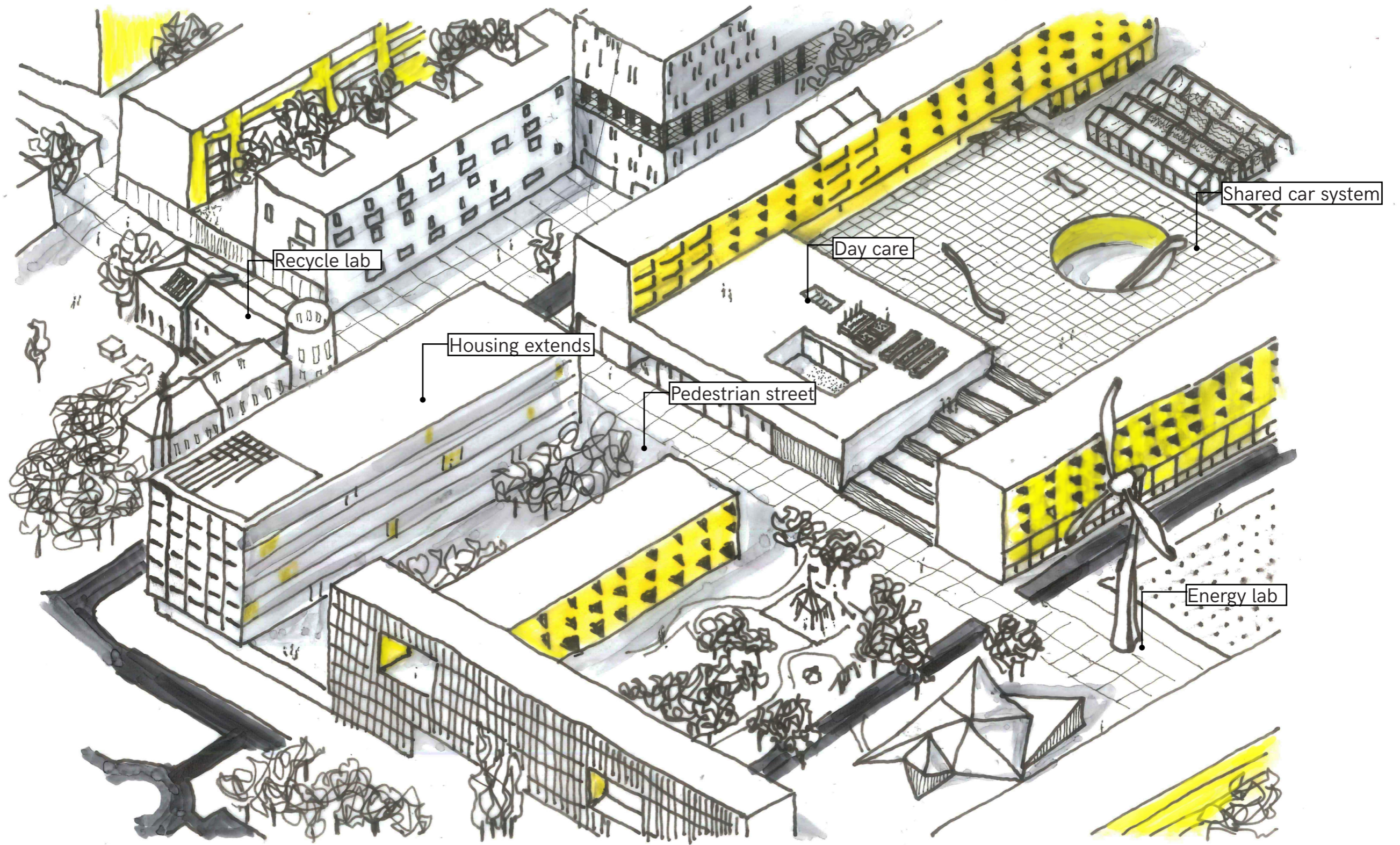
[fig.65] Plan of ground level of Pendrecht



Open spaces are run as commons on municipal level and are used for production of energy, infrastructure and parking areas.



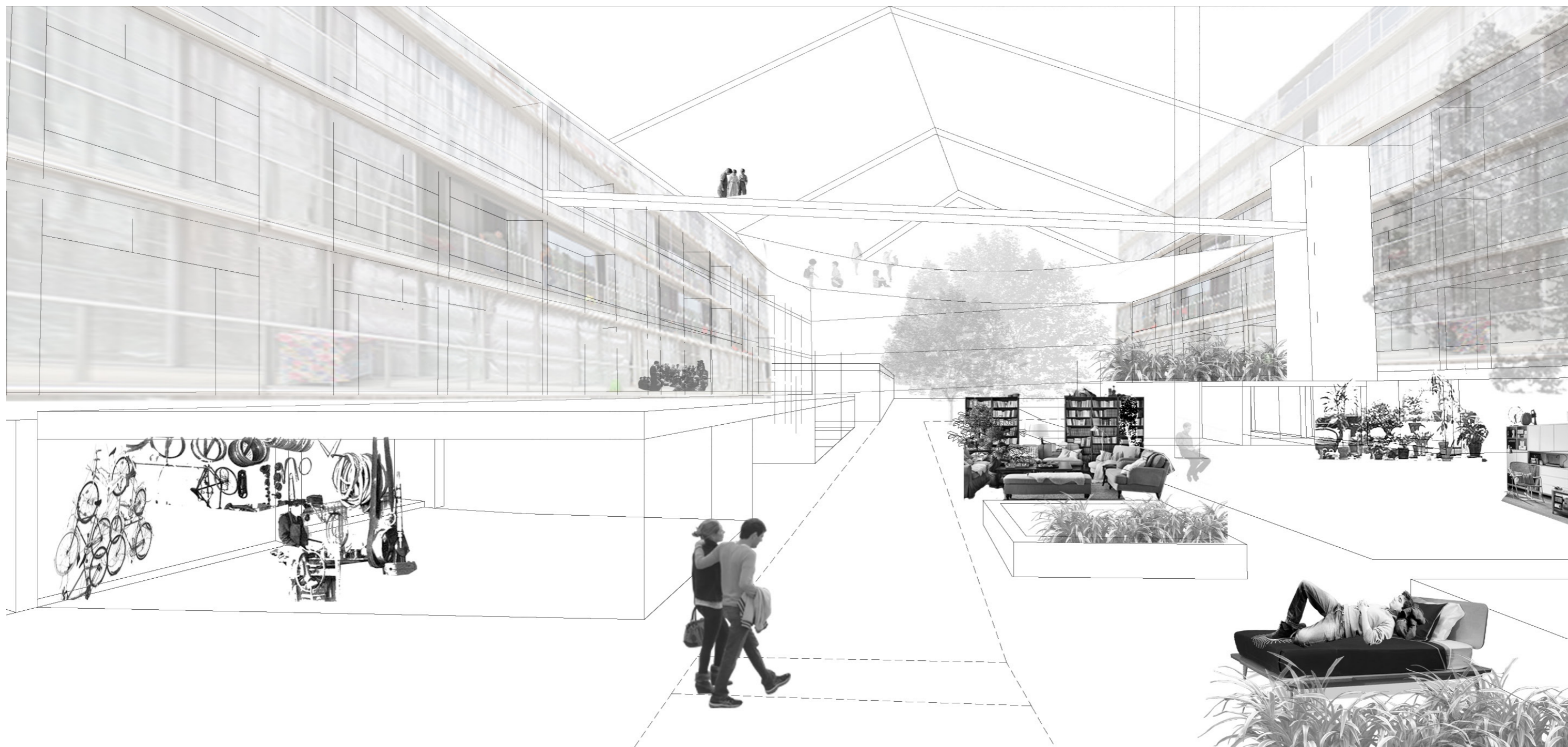
Groups of households are defined as living-working units collectively governed by representatives or assemblies and the yellow shows spaces for adoption to private or collective care and job providing facilities



[fig.67] Aerial sketch of the Pendrecht area



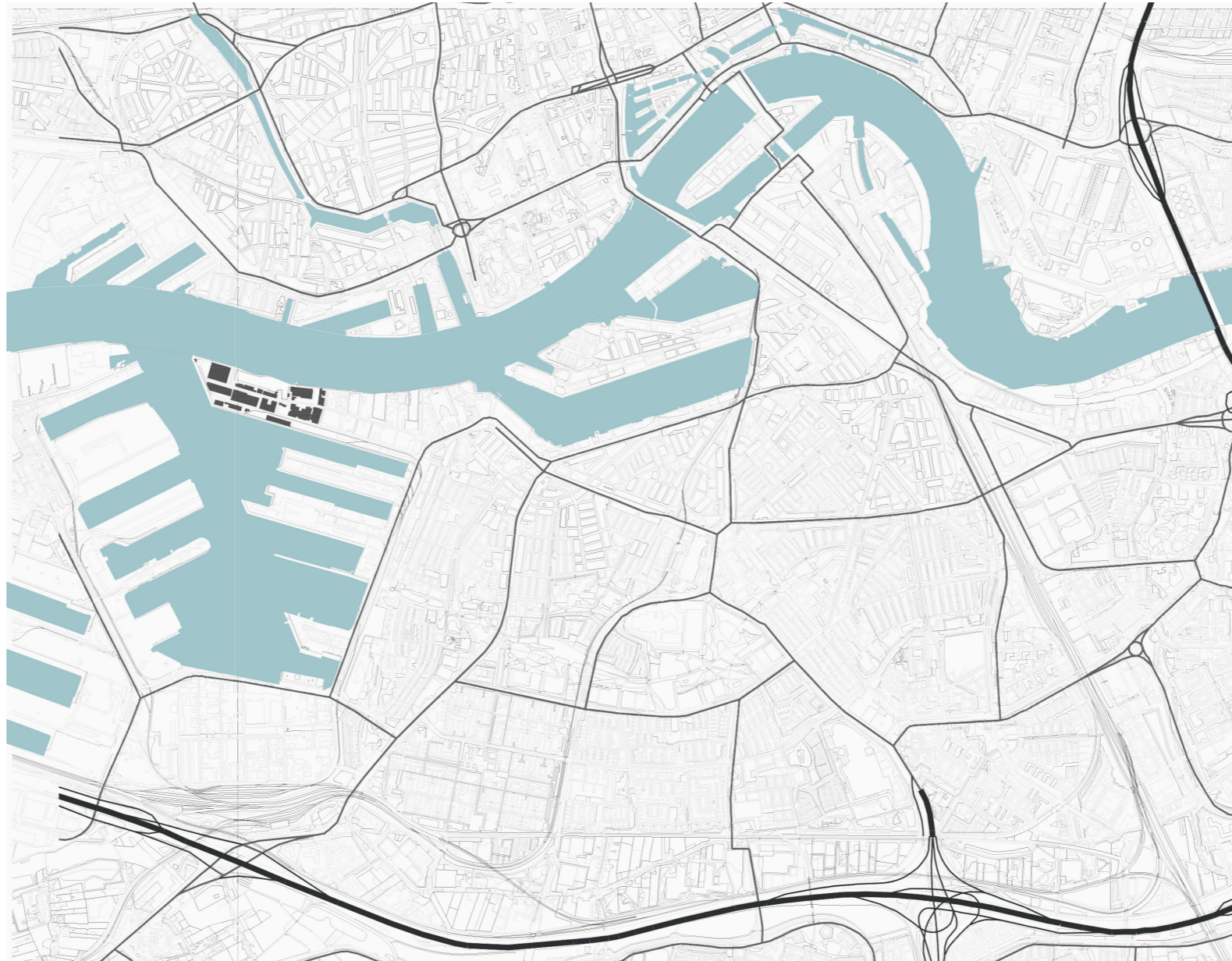
[fig.68] Street view before



[fig.69] Street view after

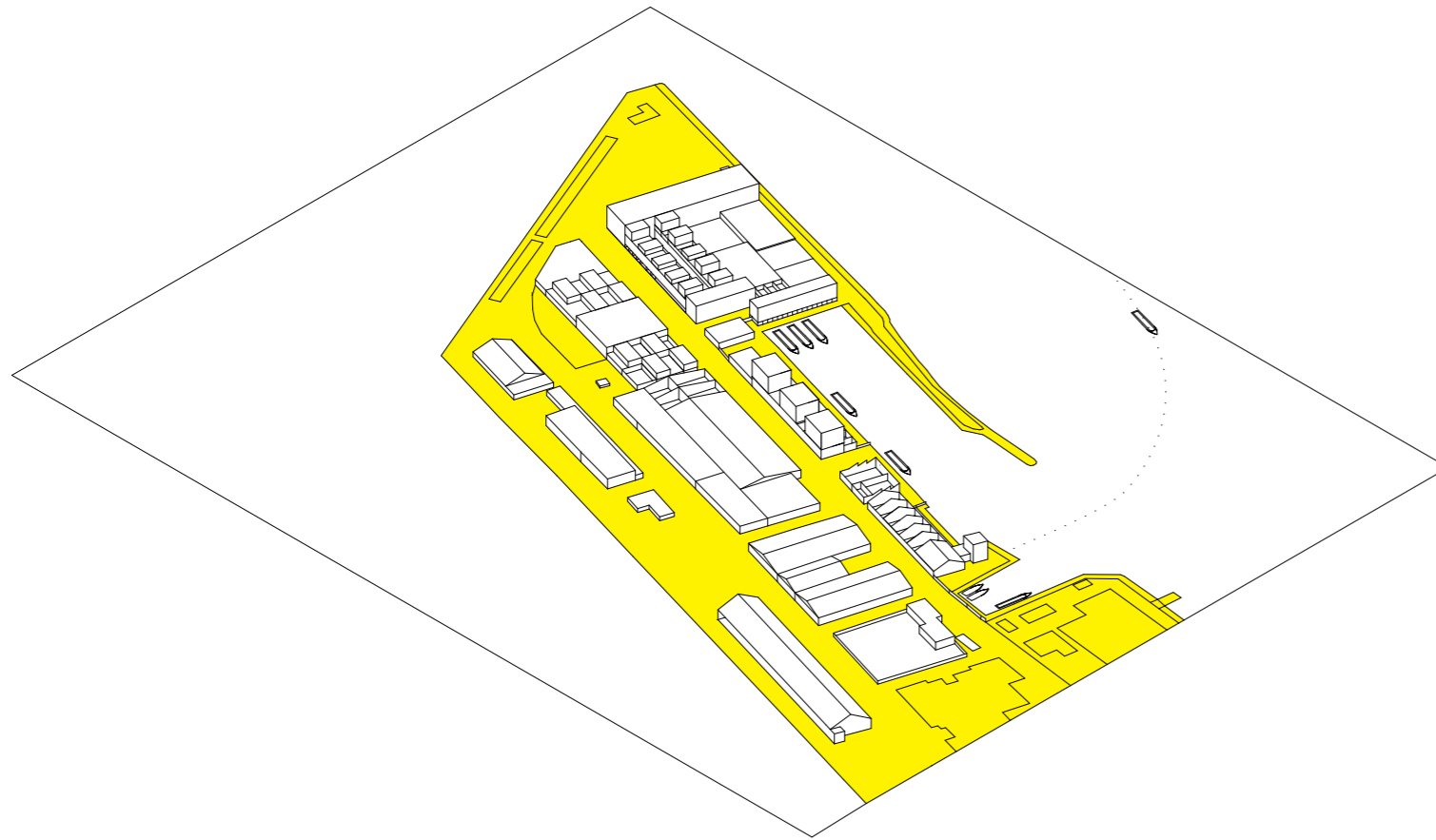
7.3.2. Waalhaven

The Waalhaven is one of the ports on the left bank of Maas river. With its surface of 310 ha. it is the largest dug harbor in the world. The Waalhaven opens into the Nieuwe Maas and is therefore connected directly to the sea via het Nieuwe Waterweg. It's northern docks are slowly being abandoned by large industrial activities and at the moment is a home of many small and medium size business related to harbour.

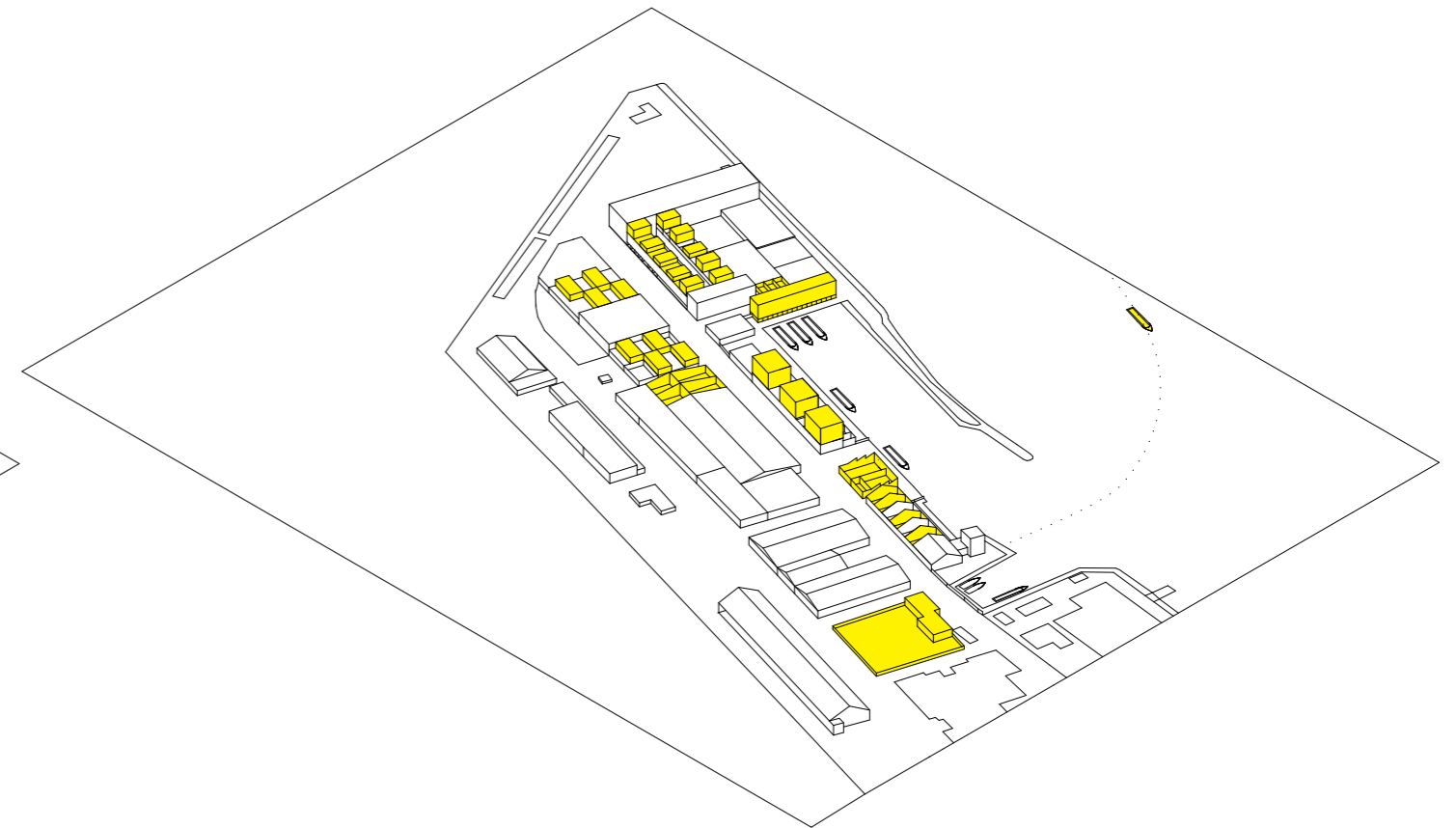


[fig.70] Location of Waalhaven in Rotterdam

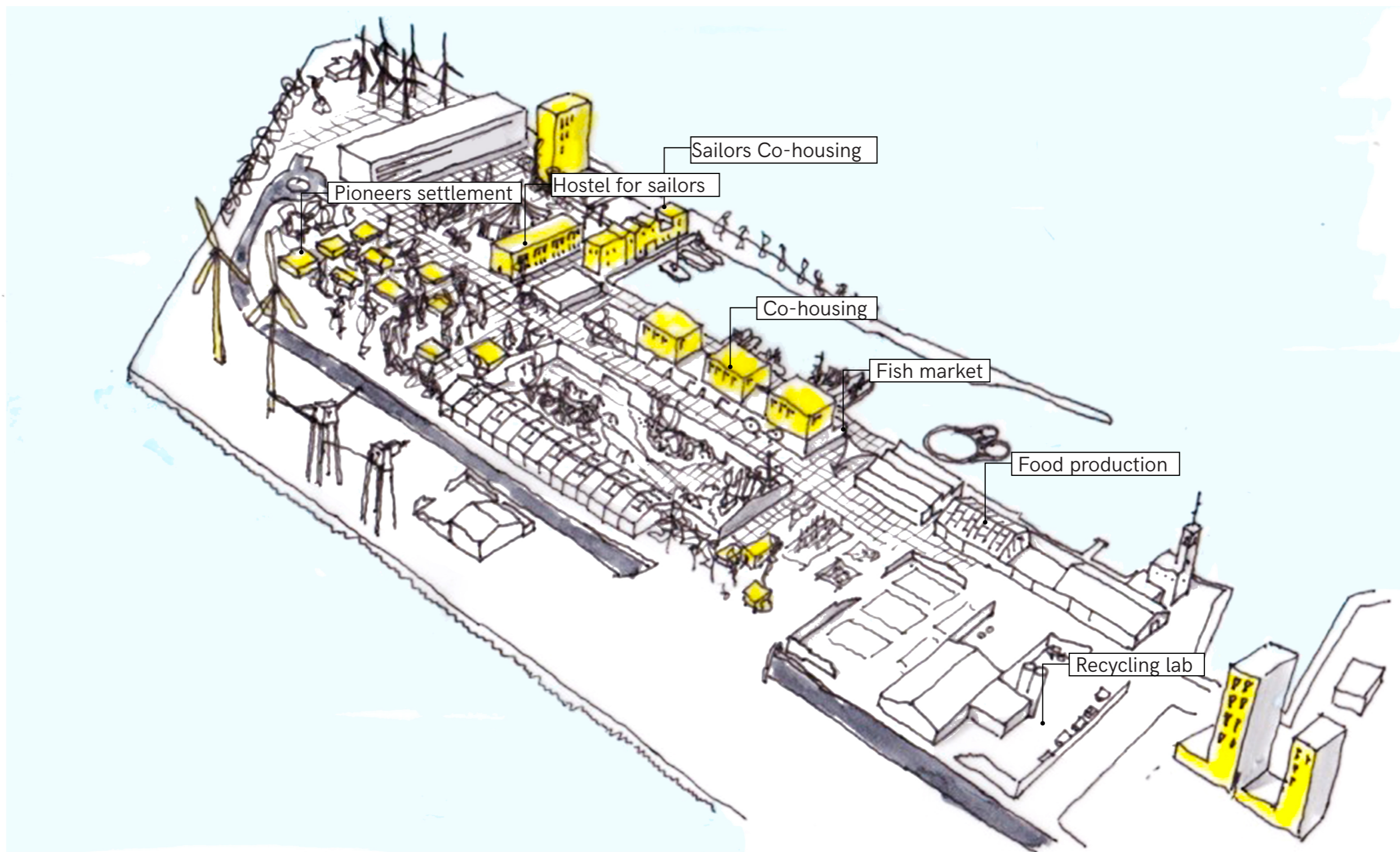




Here the large industrial infrastructure is substituted with pedestrian spaces for Depense of citizens. Gardens, energy labs, mobile settlements, circus tents stay freely in the space. Former walls of industry are used to protect crops. The area experimetns with food and energy production.



Since the area does not have inhabitants at the moment abonded industrial buildings are used for living and working as well as former plots of harbour for mobile homes and temporary forms of stay. Here delineation between private, public and collective i still not firm and we could call this condition 'Pioneering soup'.



[fig.72] Aerial sketch of the Waalhaven area



[fig.73] Street view before



[fig.74] Street view after

THE END: REFLECTION



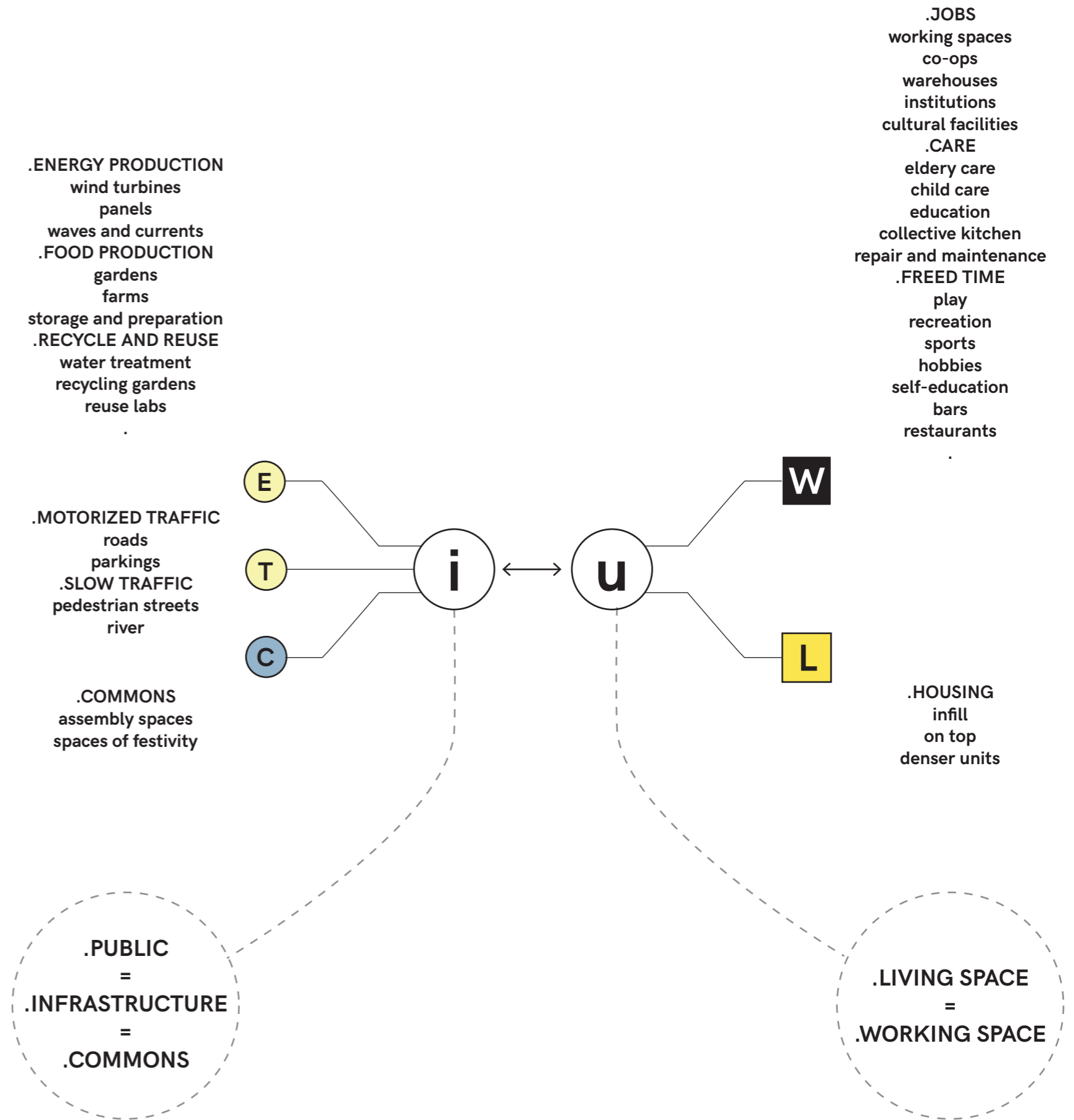


8.1. Conclusion summary

The implementation of De-growth implies two scales or levels of transition. The city and the block. From Ostrom's principles for design of Commons I learned that it is important to draw a clear boundary between what is common and what is private/public. The line is drawn precisely between the space that belongs to scale of the city ie. highways and river and spaces that belong to block and its users. So all the spatial intervention can be divided in those that are served by block as spatial unit and those serving blocks on higher scale.

Next conclusion that continues down this line is the fact that the spaces that should be managed on the level of the city could be spaces which ensure run of flows, such as goods, people, energy and recycled materials. I call this spaces flows and in diagrams on the left they are presented with letter (i). These flows are too large to be managed by the local communities and their distribution is common interest. If they are run as commons it would imply different structure of governance. What is today taken as public amenity should be managed as commons.

The other scale of spaces is essentially connected to relation of work and living spaces. In Degrowth scenario this should be condensed into form of certain unit (U) encompassing certain number of households. Within this unit traditional rules of property rights, rent, fiscal economy, ownership should be contained but at the same time self manageable and based on capability of housing to produce households basic income. This way economy circle and general footprint would be ceased and certain level of autonomy would be maintained. Neither state or municipality neither infinite market should capture the flows and limit their impact on environment. This should be done on the scale of ones immediate surrounding, through making housing closely related to income generation.



[fig.75] Summary



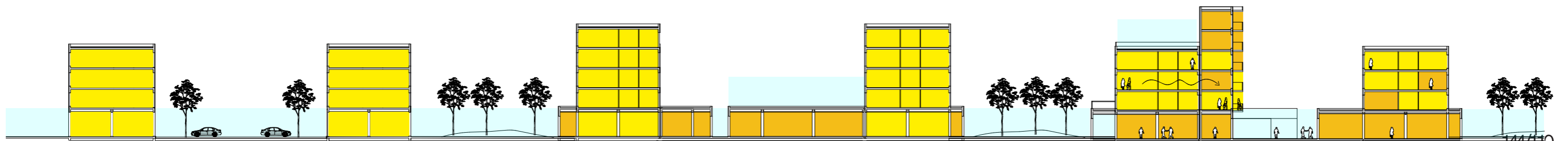
[fig.76] Beneath the pavement, BEACH!

8.2. APPENDIX

Technical drawings of group of blocks in Pendrecht.

[fig.77] Roof plan

[fig.78] Section in 3 phases



[fig.79] Conceptual plan of floor level



8.3. Final reflection

Overall, In my thesis I tried to examine in depth indications of the De-growth theory for urban planing and to draw spatial implications from that. The chosen case study is the city of Rotterdam, known for its growing harbour and top-down and growth based paradigm of urban development. The goal is to link economic and environmentally oriented theory with urban planing via researching possible transformation solutions and optimizing them according to concrete locations.

RESEARCH QUESTION

The research question that defines the research and design part of the project is:

(RQ) *What are the spatial implications of applying the De-growth principles in urban planing of the city of Rotterdam?*

Through this question the continous links are rendered between theory of De-growth that is studied in Msc3 and practical implementations taking place in the physical urban structure that is examined during Msc4. The links were further researched by separated set of sub-questions in research and design phase of project.

This was done through these sub-questions:

(Q1) *How the imperative of growth shapes the city of Rotterdam?*

(Conclusion derived from historical analysis and analysis of planing documents supported choice of scales and testing sites, Learning from existing practices supported development of implementation strategy)

(Q2) *How does new non-growth oriented economy influence space in example of everyday practices of collaborative housing/working?* (Example study through theoretical paper and participation later supported phase thinking and action plans making in design phase)

(Q3) *What are the spatial implications of the De-growth theory?*

(Broad overview of implications became ground for design and goals of design)

APPROACH

In research phase through literature readings, especially ones of Latouche and Kallis, implicated objectives of De-growth are translated into spatial inputs for planning and design. The way how to work with these inputs was then developed based on personal experience of participation and study of self-organized and/or collaborative practices. Here key insight was done through participation in project Stad in de Maak in Rottedam Noord that actively experiments with new economies and combines living and work in collaborative community.

The principles their work is formed around results in conceptions that can be traced in space.

This analytical path I followed to establishe first set of conclusions about potentials of De-growth in space making. Real challenge of research was to upscale these conclusions and to contextualize them in generic types of urban fabric.

Test ground of the project is city of Rotterdam, known for its growing harbour and top-down and growth based paradigm of urban development. More specifically it is a strip of urban areas in contact zone between the city's housing areas and the harbour. Here the study of urban fabric gave information on potentials for implementation based on state of amenities, economic and housing conditions, infrastructure and mobility. These indicators are developed based on density, mixed use, infrastructure, public space and energy. Clarifying these indicators was complex part of the process that went parallely with the design. In this sense it was research throguh design that corected implications until their final version.

Combining analytical and design based methods conclusions are derived on two levels: governance and spatial morphology. This process did not draw blueprint for implementing De-growth but it set foundation and ceiling for how the language and some converging concepts (ie. Commons) can be implemented in general discourse of urban planing.

Following research paper *Surveying density, urban characteristics, and development capacity of station areas in the Delta Metropolis* (C C Kickert, M Berghauser Pont, M Nefs, 2014) seven general urban types are taken for sampling the indicators in context of city of Rotterdam. Each of these 7 types have specific characteristic considering mixture of activites, diversity of housing and user groups in public space, presence and volume of motorized traffic etc. After maping these characteristics preliminary design as form of research for capacity for an optimal 'De-growth scenario was done. This step was followed by preliminary designs made on two locations: Waalhaven - port area and Pendrecht - Garden city. The design shows more detaiy how optimal scenario would be achieved based on set indicators. Finally, based on results of design and existing number of examples discussion of governance and transition sceanrios was developed. Set of basic actions or tactics is defined and described and proposed model of densificationa and parition of space is polemicized. Applying of action plan implies the new model of city and the way of governing it. This is presented as final part of design.

PRODUCT, PROCESS, PLANNING

The research through design has been set through two challenges:

(D6) What kind of city scape would be created through De-growth transition?

(D5) How would transition towards the De-degrowth city take place?

The design is utilized as a tool to visualize the physical transformation between in different parts of urban fabric. The product therefore has two parts: design proposal in scale 1:1000 showing all important physical features of ideal urban transformation developed in De-growth scenario and set of conclusive material that draws mostly non-physical implications of this approach ie. governance method, transition course, phases etc. This part of the project is an open ended discussion more than fixed conclusion.

CONCLUSIONS

The relation *urgency-solution-space* is enriched by few conclusions and here I find the most relevant contribution of my work so far. So instead of recapitulating chronologically the whole process and complex methodology I can round my work with three conclusions:

a) *Urban forms are primarily result of process strongly dependent on governance. In this sense De-growth should be designed process. The first aim is to go beyond small, local scale, spontaneous project towards occupying actual multi-scalar planing field with the urgency for transition towards De-growth*

b) *De-growth is form of sensible densification. The terms under it should happen can be measured, transferable and planned.*

c) *The capacity of urban fabric to contain tactics for transition of socio-economic relations depends heavily on paths and patterns of mobilisation in local and municipal level. For this reason it is important to draw clear distinction between spaces and flows governed and design as common, collective or private.*

The question of what is essentially different between existing course of development and alternative one proposed by project does not necessarily imply radically different spaces. This is what design phase brought up. What defines the difference is the course of transition and intended preset goals that one sets when starting a design process.

On the other hand only through making this step of concretization of assumptions in certain context can lead to important concusions of what would be different in the city of De-growth. It is the difference in structural

organization or perception of what in the city is run in what way. New ideas of commons and reading of existing documentation on housing helped to understand that city already has structure for application of De-growth that has to be filled with proactive content of urban elements and inclusive transitional governance. This taught me to recognize different potential in already existing ways of how the city functions.

ASPECTS OF THESIS

In the final reflection it is required to explain conclusions in terms of relation between certain aspects of the project.

A) Relation of research and design

First, the thesis subject that is explored is not focused on providing real-time solution to concrete location through design. The project is using design to visualize possible future sketched by existing theory. Design here is used as form of research, applying theory on concrete site and deriving conclusions from it. The background for this form of research through design is created through analyzing sites, urban fabric and contains, as well as theoretical framework.

What can be concluded is that reflecting on how different elements of design and design process on particular location came together can support, correct or discharge preliminary assumptions that were base for design and bring new light on expected outcome of design after research. Example is the way how commons became from abstract idea that was supposed to ideologically fit in design concrete set of spaces related to flows and there for include infrastructure. Further correction of capacity for transition of different urban types and proximity to optimal degrowth condition in comparison with existing state also showed different than what was expected before design. This allowed project to develop set of solutions for this transition on wider level that can be transferable and transcalable.

B) Relation between methodical line of approach by chosen studio and students methodological approach

Graduation studio has an approach of using design in different scales and approaches to discuss socio-political dynamics of built environment. It is expected to have a deeper insight in existing economical, political and environmental processes that produce the space today, look into different actors, conditions and set the hypothesis that can be tested through design. In research of theoretical framework project created method of deriving principles, conceptions and spatial implications from combined reading of theory and analysis of existing practices. Helpful method to obtain practical

knowledge of reading, understanding, criticizing and improving formal policy documents was reading and reacting to document Woonvisie Rotterdam 2030. It explains direct connection between political will and spatial consequences it produces. To act upon these documents requires skills of urban planner and negotiator. Although project tries to work on this ground there is a lot more to learn in tuning together personal ideology, official documentation and planning paradigm and professional skills. In this sense I am inspired and curious what I will learn in future from this point of view.

C) The relationship between the project and the wider social context

Continuing on previous reasoning on relation of profession and politics I concluded that I was seriously struggling to balance knowledge, beliefs and opportunities that are framed by reality. I seriously doubt that De-growth will soon have its chance to be implemented and I after all I doubt its ability to adopt to overwhelming set of urban, social and ideological realities that are out there. However testing ideals in preexisting spatial context is sobering but important process. What excites me is that there are other more technical and specific informations and supports to my beliefs that came out of this project. In example, role of commons in urban planning. Further I conclude that the project is an example of valid effort to imagine more than rational strict line of design which TU Delft cherishes. Applied method and detailed scale of design did their best to keep it as convincing and realistic as possible

Lacking to support this conclusions is last step of zooming out on macro scale. Although it would be a step towards assumptions again it would be useful to present coherent relation between design and its implications. However it was more interesting to work in concrete context on smaller scale and realize that there are so many potential conclusions laying within that scale that are transferable to other scales and locations. Also the project lacks some in depth work on links between possible actions for transformation and final design proposal. Result is a feeling on incoherence between different parts of project.

For this reason the project did not fully answer the research question. Lack of coherence between different implications of research and design part of the project happened due to ambitious methodological framework and lack of focus on existing examples that could bring the project closer to being a real visualization of De-growth based future. On the other hand relation between the transformation of existing physical structure based on theoretical implication managed to stay tight and informative.



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