RESEARCH

CENTRAL SPARK

THE ENLIGHTENMENT OF DUTCH NEIGHBORHOODS

DESIGN

A MANUAL TO THE BOOKLET

The booklet you are holding enholds the graduation project of Jolie Nena Tops. The project was conducted within the studio of Advanced Housing Design. From the booklet two stories unfold; physically separated from one another, but contentwise interwoven and interdependent. From the frontpage, you can either decide to follow the path of '*the research*' or '*the design*'.

The story of the research starts by presenting the initial research proposal that was conducted at the start of the research. Thereafter, it continues in a different format. Throughout the project I have encountered many ideas, concepts, references, images, drawings, thoughts, quotes, case studies and inspirations. I bundeld these in a separate booklet, in which they can be experienced as all different contents about which you can think and philosophize as you scroll through it. However, I also captured them chronologically in a conceptual timeline presented as a catalog - an assembly of - that guides you through the progress of the research and design. The assembly can be more deeply understood by reading the overlaying textual explanation - which is embodied with notifications that came to mind throughout the research - at particular points in time, at particular stages within the research, particularly important for that moment of time and stage. Like a flash back in history, these reveal the different pahts that have been explored through time.

The story of the design on the other hand guides you through the development of the design. It unfolds from notice of spatial challenges, wherefrom the possibilities of design as a solution are explored. The research forms a foundation for design ambitions, principles and strategies, from which the building concept originates. Finally, the building concept responds to the initial spatial challenges. Choose your own way of travelling through the project, I hope you enjoy it! :)

RESEARCH PROPOSAL

The initial research proposal, titled "Beyond the Boundary," was written in October 2023. The title hints at the content of the proposal. It starts with a story from my daily life that inspired me to research this field. A broadly oriented research initially helped me to define the problem statement in alignment with my personal observations. Gradually, my focus narrowed, directing my research specifically towards the field of architecture. I discovered that the issues I was investigating were mainly discussed within the realm of social architecture.

I therefore delved deeper into this field, studying works by from authors such as Jan Gehl, Aldo van Eyck, and Richard Sennett. This enabled me to situate my research within a theoretical framework, leading to the formulation of the following research question:

"What are the differences between boundaries and borders within the framework of human and non-human relations?"

This research question has remained central to my graduation project. The theme of boundaries and borders, initially a somewhat abstract concept to me, has been a constant thread throughout my research proposal, research, and design phases. Through my academic journey, I have developed understanding of these concepts. This process clarified the problem statement, while the design phase allowed me to design a tangible and concrete solution. This booklet chronicles my journey, sharing the insights and developments I have gained along the way.

BEYOND
THE BOUNDARY

There is a reason I don't talk to my neighbors.

There is no need. The only time I really think about talking to my neighbors is when I've forgotten the key to my front door and locked myself out of the house. Or when my package is delivered next door because I wasn't home. In such situations, I'm immediately confronted with this awkward feeling of guilt. I wonder why I never talk to them. I would probably not even recognize them in the street. How can we physically spend most of our lives living 10 meters apart from each other and yet not even know each other's names?

BRIEF SUMMARY

With the increasing population, more and more people are in need of a home. The expansion of urban environments will lead to increased urban sprawl, with all its negative consequences. Therefore, we are compelled to densify within existing urban areas. With this comes the challegne of 'living together' within less space, addressing both human and non-human interactions. In a society that has become increasingly individualistic, the issue of coexisting in smaller living spaces has become a legitimate concern. However, the trend of individualization should not be interpreted as opposing social integration, as if these processes exclude one another. In fact, societal development has thrived on the differentiation of originally symbiotic relationships. Nonetheless, based on the observations I describe in chapter 2, I concluded we are mostly focused on our individual selves and appear to be closed off from our surroundings. As I realized in each of the observed situations, physical boundaries play a role. This led me to question whether the existence of physical boundaries could influence human behavior. This question was explored in existing theories and arguments on this topic, providing me with a deeper understanding of how I could research this relation.

CONCEPTUAL RESEARCH DIAGRAM
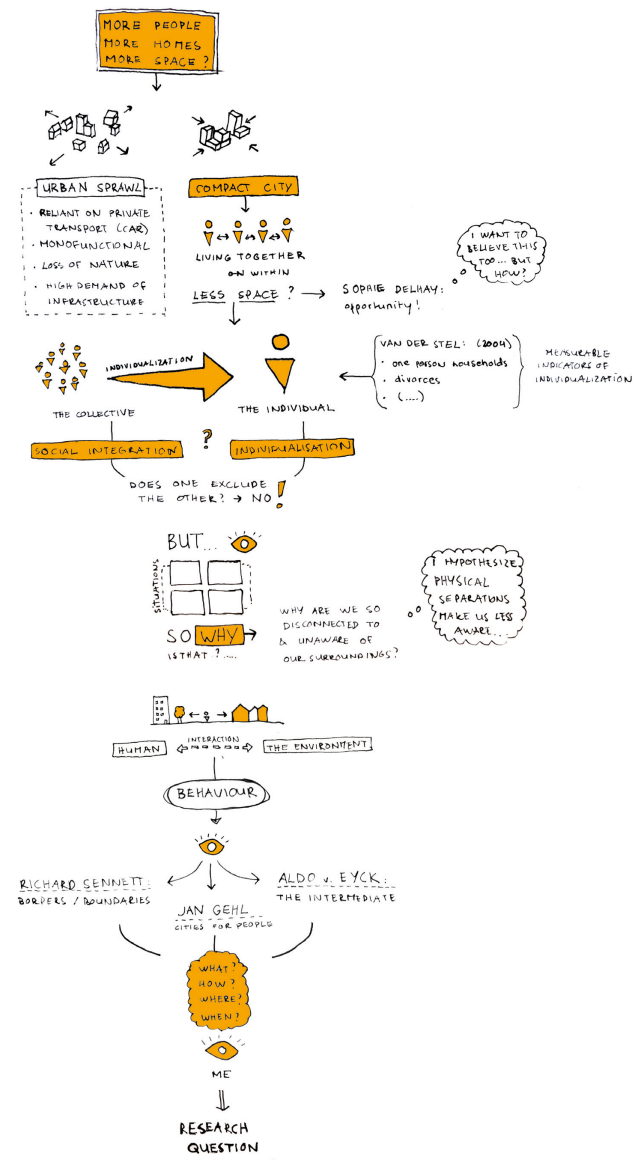
I. WE NEED MORE HOMES

With an increasing population in the Netherlands, there is also a rising demand for suitable urban planning and housing forms. According to the regional forecast by PBL (2013), a significant concentration of population growth is expected especially in and around major cities. More people will require more homes.

Nearly three-quarters of the Dutch population lives in urban regions. At the same time, the proportion of residents living in large urban regions (with more than 500,000 inhabitants) is remarkably low: half of the urban population lives in small urban regions. Over the twentieth century, the clear distinction between cities and the countryside has become increasingly blurred (PBL, 2015).
Cities have transformed into urban regions. Urban residents move according to more complex patterns than before, not only for work but also during their leisure time. The increase of complexity in daily patterns of behavior has increased the reliability on and use of mobility networks. However, too many movements result in congestion and delays within urban regions. According to research on mobility in the Netherlands, traveling within highly urbanized regions is relatively more time consuming. Whereas 21% of car traffic took place within cities, 39% of travel time by car took place within cities (PBL, 2015).

Though the population in cities will increase, within existing urban context, widening roads or constructing new connections is often not feasible. According to Jan Gehl, architect and urban planner, this would also not contribute to solving traffic congestion in urban areas. In his book 'Cities for People,' he argues how more roads only lead to more traffic (Gehl, 2010). We are therefore compelled to think about different, more integrated solutions.

URBAN SPRAWL

The most traditional and conservative housing typology in the Netherlands is the family home. Of the nearly 8 million dwellings in the Netherlands, 42% are rowhouses, which are houses joined to neighboring houses by shared walls (Cambridge dictionary, 2023). While the family home is beloved in the Netherlands, it also occupies significant space in relation to the number of people living there. As a result, expanding urban areas in this manner contributes to increased urban sprawl.

Examples from around the world have demonstrated the negative impact of urban sprawl. Low-density development requires more infrastructure than a compact city, leading to a higher reliance on private transport and more travel kilometers per inhabitant. Additionally, urban sprawl promotes monofunctional urban design and threatens the preservation of natural habitats, as areas with ecological significance are erased by the rise of new housing projects (Michael Mehaffy, TU Delft). To prevent urban sprawl, we are challenged to consider different and more compact forms of densification."

DENSIFICATION

A solution opposing urban sprawl would be to densify within urban environments, towards a more compact city. According to Sophie Delhay, architect in collective housing, the task densification is more of a natural obligation, a 'new condition'. She raises the question of how density can become an opportunity for new communities, within the building envelope of the house and outside (Delhay, 2022).

LIVING TOGETHER?

With this 'new condition' in the field of urban design comes the challenge of living together – humans and non-humans – within less space. The sense of concern I experienced in this realization triggered my desire to research this challenge. I questioned myself: "Are we even capable of 'living together'?"

Individualization, as a social development, can be objectively identified. Developments such as the decrease in the number of marriages, the increase in one-person households, and the rising number of divorces in Dutch society are among the indicators of increasing individualization. In the 1970s and 1980s, individualization was still understood in the context of emancipation and was therefore seen as a positive development. However, today, individualization is mostly associated with the alleged negative social consequences, particularly the risk of a loss of social cohesion (Van der Stel, 2004).

Van der Stel, Dutch sociologist and researcher known for his work in the field of social and behavioral sciences, addresses questions that are in line with my personal interest concerning the relation between individualization and social integration:

*"Doesn't individualization run counter to the willingness to integrate oneself into social networks?*

Aren't people collectively moving towards a state in which they are becoming more 'individual' and less 'social'?

Is the 'sociality' of human nature perhaps just ideology, and has humanity always been inclined to behave as individual nomads?"

Refuting these questions, van der Stel states individualization should not be interpreted as opposed to social integration, as if these processes exclude one another. If that would be the case, he states, at a certain point we would face end of society – the act of living together socially. In his opinion, individualization is a prerequisite for social integration. He questions the term 'social cohesion' as this suggests a society characterized by the extent to which individuals 'live closely' together, without any conflicts or escalations. According to Van der Stel, the term "social cohesion" implies consolidation, whereas societal development has actually thrived on the differentiation of originally symbiotic relationships (van der Stel, 2004). In other terms, individualization benefits societal development rather than it impedes this. Research on the number of social contacts and social participation of citizens substantiates this statement, as the number of social contacts and social participation of citizens has in fact remained stable. This demonstrates that 'individualistic' doesn't necessarily mean 'every person for themselves.' (CBS, 2017).

The increasing prominence or importance of 'the individual' should therefore not distance us from our surroundings. However, through personal observations I experienced this differently.

II. OBSERVATIONS
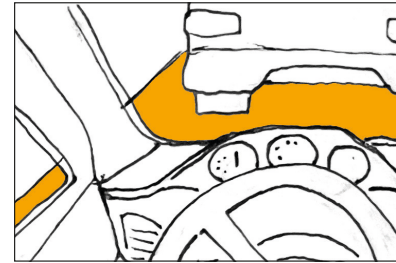
i. car
      This observation got to me while I was crossing the street in Rotterdam. Looking at a traffic jam of cars, I realized the absurdity of it. Every person behind the wheel, most of the time alone, is completely closed of from the world around them. When we're in our car, we don't have to encounter anyone or anything. There is a distinction between inside and outside, between yourself and 'the other'.
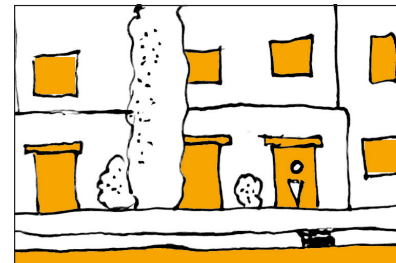
ii. house
      This observation relates back to the anecdote at the start of this proposal. Though me and my neighbors are physically living within a distance of ten meters apart from each other, we don't know anything about each other. We don't have to share anything and don't directly need one another. Again, there is a distinction between inside and outside, between myself and 'the other'.

iii. city
      This observation struck me while visiting my dad in Arnhem. Living in Rotterdam, I didn't notice it was turning autumn. Only when I visited by dad who lives close by a forest, I was surprised to see how the season was changing. This illustrates how distanced I am from natural surroundings in my daily life. Living in the city, I exist in my own bubble. Again, I don't interact with 'the other', in this case nature.

illustration of observations

As concluded before, "individualistic doesn't necessarily imply 'everyone for themselves'", but these examples show we are actually distanced from our surroundings.

However, I noticed a common factor in these observations: in each, the individual is distanced from 'the other' by physical limitations. In the first observation, the car forms a harsh distinction between the human and the environment. In the second, the closed building envelope encourages separation. In the third, the buildings in the city create a physical distance to natural habitat. This realisation inspired me to research the relation between human behaviour and the physical environment.

III. THEORETHICAL FRAMEWORK

Richard Sennett

The relation between social and material practices has been extensively studied by Richard Sennett, sociologist, author, and urbanist known for his work on the dynamics of cities, urban planning, and the effects of urban life on individuals and communities.

In his theory on the relation between social skills and the physical Architecture of Cooperation, he distinguishes two different kinds of edge: 'the boundary' from 'the border'. In this, he applies the following definitions:

The boundary - *"The boundary is a guarded territory, as established by prides of lions or packs of wolves. The boundary establishes closure through inactivity, by things petering out, not happening." (Sennett, 2012)*

The border - *"The border is a place where interaction between different species increases, where differences need to be negotiated, where there has to be exchange." (Sennett, 2012)*

Sennett illustrates the difference between the boundary and the border by making the parallel to the differences between a cell wall and a cell membrane. The cell wall is characterized by its rigid structure, while the membrane is characterized by its porous and resistant condition. In temporary urban environments, Sennett states, the boundary dominates the border. Sennett explains the translation of his theory to architecture through three scales. In the first scale he distinguishes dialectic and dialogic interchange. In the second scale, he addresses declarative versus subjunctive expression, and in the third scale he addresses identification in the other in terms of sympathy or empathy. In conclusion, he states architecture of cooperation is better served by spaces that enable dialogic, subjunctive and empathic social exchange. Through this theory, Sennett links the physical environment to human behaviour. Relating back to the observations, I will use Sennett's theory on edges to explain what illustrated as 'inside and outside', between 'yourself and the other'.

Aldo van Eyck

This paragraph discusses the understanding of the relation between human behaviour and the physical environment in the context of Aldo van Eyck's argument.
Van Eyck was inspired by theories which are related to 'the inbetween',

to place and identity and human-centered design. He also believed that architecture plays a crucial role in shaping social interactions.

In 'The Child, the City, and the Artist', he advocates that there is no such differentiation of spaces into non-intermediate and intermediate spaces. As described by Campos in 'La imaginación, lo intermedio y la deriva': *"...for Van Eyck every space, if it is a place, is a between, a place between this and that, between this and the next moment"* (Campos, 2021). According to van Eyck, the role of architecture is *"...to provide this Realm of the Intermediate through construction; facilitate, a set of real places for real people and things, from the domestic scale of the house to that of the city"* (Van Eyck, 1962).
In the argument of Van Eyck, the place is a lived space, with someone inside being the someone between things (Campos, 2021). Relating back to my observations, Van Eyck illustration of the realm of the intermediate inspired me to reimagine what boundaries and borders could become, by looking at them through the perspective of Van Eyck. More than Sennett's interpretation, Van Eyck's interpretation of the intermediate implies a sense of movement.

Jan Gehl

Lastly, the relation between the built environment and human behaviour is approached in the context of Jan Gehl's argument. In his books 'Life Between Buildings' and 'Cities for People', Gehl explores the relationship between people and the built environment in urban areas. Gehl emphasizes the importance of designing cities that are human-centered and promote social interaction.

Gehl's understanding of the connection between human behavior and the physical environment is more practical than the perspectives previously discussed. In his book 'Cities for People' he illustrates the relation between urban structures and human behaviour by citing historical examples of urban planning. For example, the fixed and ordered layout of the main streets, public building and barracks in the colony towns of the Roman empire served their military role. In medieval cities on the other hand, the compact and dense structure with short walking distances, squares and marketplaces reinforced their function as centers of trade and craftsmanship. These examples support his argument that physical planning significantly influence how individual areas are used. Relating back to my observations, I imagine to use Gehl's practical approach towards relating human behaviour to physical design in understanding the relation between both. (Gehl, 2010)

IV. QUESTIONS OF INTEREST + RESEARCH METHODS

The shift towards densification in established urban areas, aimed at creating a compact city, significantly impacts the concept of 'living together', incorporating both human and non-human interactions. In a society that has become increasingly individualistic, the issue of coexisting in smaller living spaces has become a legitimate concern. However, the trend of individualization should not be interpreted as opposing social integration, as if these processes exclude one another. In fact, societal development has thrived on the differentiation of originally symbiotic relationships. However, based on my observations, I concluded we are mostly focused on our individual self and appear to be closed off from our surroundings, as visiualized in the figure. I therefore questioned whether the existence of physical boundaries could influence human behavior. This led to the following research question:

What are the differences between boundaries and borders within the framework of human and non-humans relations?

The terminology of the boundary and the border is defined as stated in Sennett's theory on the Architecture of Coorperation. To clarify the terminology, both definitions are repeated below:

The boundary - *"The boundary is a guarded territory, as established by prides of lions or packs of wolves. The boundary establishes closure through inactivity, by things petering out, not happening." (Sennett, 2012)*
The border - *"The border is a place where interaction between different species increases, where differences need to be negotiated, where there has to be exchange." (Sennett, 2012)*

By mentioning the framework of human and non-human relations, I focus my research beyond the human perspective. I interpret Sennett's definition of 'the border' in a broader context: the interaction between different species can also imply the interaction between a human and an animal, or between a human and a tree. Rather than focusing solely on the physical interpretation, I interpret the boundary versus the border as a philosophical concept as well. In relation to the observations; it describes the inside and 'outside of your bubble', it addresses the 'you and the other'. It extends beyond just the human perspective.

The main research question raises a lot of other questions, which cannot all be addressed in this research proposal. However, the most relevant sub-questions I intend to address in my research are stated below. Following the question, I explain the methodology or methodologies I will use.

1. How can boundaries and borders be identified within the framework of human and non-human relations?

In an attempt to understand the differences between borders and boundaries within the framework of human and non-human relations, these distinctions initially need to be identified.
In his book "Cities for People", Gehl illustrates a very practical method concerning the distiguishment of hard edges and soft edges (Gehl, 2010). He mentions six scales through which the hardness or softness of an edge can be analysed: Scale and Rhythm, Transparency, Appeal to Many Senses, Texture and Details, Mixed Functions and Vertical Facade Rhythms. Through (1) Analysis of the site based on these scales, I inted to identify boundaries and borders within the framework of human and non-human relations. This first step in the methodology provides a clearly outlined base for the research.

2. What is the relation between human behaviour and boundaries and borders within the framework of human and non-human relations?

Having examined the use of space and identified the borders and boundaries, the relation between these can be explored. The border and the boundary as defined in Sennett's definition, are places that can be identified by inactivity and activity. Therefore, the study of human behaviour, praxeology, can be used to 'read' physical space, as human behaviour can in fact be interpreted as the visible effect of physical space. This qualitative research method can inform us on the existence of borders and boundaries by studying the use of space.
I intend to apply this research method in the method of (2) Bordering, as explained in the publication of '49 Methods and Assignments for Writing Urban Places'. This reasearch method allows me to identify the potentialities and dynamics that edge zones establish (Bernal et al., 2023).
(3) Collaging allows me to assemble what appear to be unrelated elements together into a new composition. By using this research method I intend to gain understanding of the patterns of human behaviour in relation to borders and boundaries within the framework of human and non-human relations.

V. REFLECTION

With the increasing demand of densification within existing urban areas, the issue of coexisting in smaller living spaces has become a legitimate concern. Through my research, which will eventually be applied in architectural design, I intend to reimagine this challenge as an opportunity for new relations extending beyond the human perspective. The definition of Richard Sennett, the imagination of Aldo van Eyck and the practical methodology of Jan Gehl will hereby serve as a framework to address the contemporary society is facing. Major issues concerning social challenges like caretaking of elderly, and environmental challenges like climate change inspired me to reimagine relations within the context of dwelling. By studying the relation between human behaviour and spatial design, I intend to create a design that stimulates human consciousness, to catalyze a symbiose of human and non-human relations.

A. APPENDIX

THOUGHTS THROUGH THE PROCESS
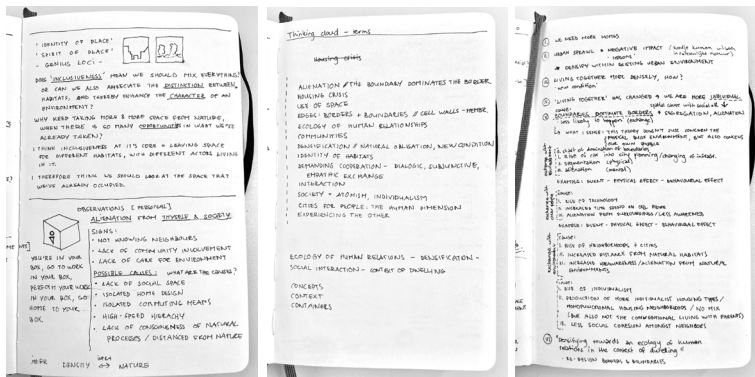
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THE ASSEMBLY

Sometimes, an idea cannot be immediately grasped. It requires time to land, to be processed, reconsidered, understood and eventually applied. Ideas saved earlier can fade into the background, becoming forgotten very silently. However, occasionally, life subtly guides you back to those initial ideas. Without you realizing, ideas that were lingering in the back of your head before, find their way to the surface of your consciousness again. Ideas that appear not to have any substantial meaning by themselves - but once related to each other start to reveal their actual significance. A narrative originates.

In this assembly I've collected the ideas, theories and references - which I will from hereon refer to as prints - that I've encountered throughout my research. The methodology of the creation of a catalog, an assembly, has allowed me to connect different contents to one another. From there, a narrative encompassing both research and design has emerged. As mentioned in the manual, the prints can be experienced as separate images, about which one can think and philosophize as one scrolls through them. However their relevance within the greater context of the research can be understood through the conceptual timeline presented as a catalog - the assembly - that guides you chronologically through the progress of the research and design. The additional text elaborates on the images presented. It is choronologically structured - from September to June - and embodied with notifications that came to mind throughout the research.

The methodology of creating a catalog has allowed me to categorise different concepts. By doing so I could discover links between at first sight seemingly different contents. The methodology has thereby been very helpful in the conduction of the research. The assembly unfolds from the next page.

September.23

Urban sprawl in the Netherlands has lead to continuous expansion of our cities without borders. Of the nearly 8 million dwellings in the Netherlands, 42% are rowhouses. This typology occupies a significant amount space - also including connection to infrastructure, electricity, sewage and facilities - in relation to the amount of people living there. With the spatial questions of our time we can no longer justify this way of building. I realised a need for change.

September.23

As I'm paying more attention to the public environment, I'm starting to notice a personal dissatisfaction. I recently moved to the city of Rotterdam, which is a big contrast to the smaller, village-like city of Delft I was previously used to living in. The broad carways, the constant noise, the dead sidewalks. As a person walking through the city, I feel subordinate to the rushing cars, trams, scooters, and other vehicles - constantly aware of not getting hit by any. At the same time, I notice opportunities. Spaces that currently don't serve any spatial quality could be transformed, reimagined, and brought back to life. I'm realizing there is no lack of space in the Netherlands; there is just a lack of good use of space.

10.10.23 - Getting away

Breathe in deeply, and out once more,

The wind's roar, the only sound you hear,

It fills your ears, it touches your core.

You turn your face towards the sun,

Eyes closed, feeling its radiant might,

You absorb its powerful light.

Breathe in deeply, and out once more.

October.23

[Observation] *There is a reason I don't talk to my neighbours...* *There is no need. The only time I really think about talking to my neighbors is when I've forgotten the key to my front door and locked myself out of the house. Or when my package is delivered next door because I wasn't home. In such situations, I'm immediately confronted with this awkward feeling of guilt. I wonder why I never talk to them. I would probably not even recognize them in the street. How can we physically spend most of our lives living 10 meters apart from each other and yet not even know each other's names?*

WE NEED MORE HOMES.

'WE'VE ALWAYS SEEN BUILDING AS *PROGRESS.* WITH OUR BIODIVERSITY, OUR AIR QUALITY, AND OUR CLIMATE *DETERIORATING,* WE CAN *NO LONGER JUSTIFY* THE OVERCONSUMPTION OF T*HE SPACE WE HAVE LEFT.'*

WE NEED TO STOP SPRAWLING.

We've built too much, too vast, too gratuitously and in the wrong places, thereby creating unused space.

Wanderspace.

Delft, The Netherlands

HOUSING CRISIS

MITIGATING CLIMATE CHANGE

ENVIRONMENTAL THREATS

RE-ST, 2020

EEN DEFINITIE VAN *'NATUUR'*:

'NATUUR BETEKENT ZOWEL DE NATUUR VAN DE NATUURWETENSCHAPPEN, DE *FYSISCHE NATUUR,* ALS DE NATUUR WAARIN MEN GAAT *WANDELEN*; DE 'SCHONE', 'VRIJE' NATUUR. IN DE MATE DAT DE FYSISCHE NATUUR TOENEEMT, GROEIT OOK DE BEHOEFTE AAN 'VRIJE', *ONTROERENDE NATUUR.'*

Tom Lemaire, 1970

EEN DEFINITIE VAN *'HET LANDSCHAP'*:

'... HET AFGEBEELDE VERBAND TUSSEN NATUUR EN KULTUUR, ZÓ DAT KULTUUR IS ONDERGESCHIKT AAN NATUUR.'

Tom Lemaire, 1970

STUDIES CONDUCTED BY PSYCHOLOGISTS AT THE UNIVERSITY OF CALIFORNIA AT BERKELEY SHOWED THAT FEELING *AWE* DURING A NATURE EXPERIENCE HAS A SINGULAR ABILITY TO LOWER STRESS AND IMPROVE OUR OVERALL WELL-BEING. EVEN MORE COMPELLING, THE RESEARCH SUGGESTS THAT WE DON'T NEED TO CLIMB A MOUNTAIN OR RUN A RIVER TO GET THE HEALING POWER OF AWE—THE SIMPLEST MOMENTS OUTSIDE ARE ALL IT TAKES.

Stiber, 2022

What is the concept of awe?

Awe experiences are what psychologists call self-transcendent: they shift our attention away from ourselves, make us feel like we are part of something greater than ourselves, change our perception of time, and even make us more generous toward others.

... WAT IN FEITE BESCHERMD MOET WORDEN IS HET SCHONE EN VERHEVENE WAT IN DE 'VRIJE' NATUUR *GEZOCHT WORDT.*

Tom Lemaire, 1970

Midden-Delfland, 2023

Tom Lemaire, 1970

LIVING TOGETHER
LESS SPACE

TOGETHER...?

URBAN SPRAWL...

...COMPACT CITY

THERE IS A REASON I DON'T TALK TO MY NEIGHBOURS....

There is no need. The only time I really think about talking to my neighbors is when I've forgotten the key to my front door and locked myself out of the house. Or when my package is delivered next door because I wasn't home. In such situations, I'm immediately confronted with this awkward feeling of guilt. I wonder why I never talk to them. I would probably not even recognize them in the street. How can we physically spend most of our lives living 10 meters apart from each other and yet not even know each other's names?

Personal observation

THE ASSEMBLY

October.23

I discovered Richard Sennett's theory of The Architecture of Cooperation, in which he distinguishes two different kinds of edge: 'the boundary' and 'the border.

The boundary - "*The boundary is a guarded territory, as established by prides of lions or packs of wolves. The boundary establishes closure through inactivity, by things petering out, not happening.*" (Sennett, 2012)

The border - "*The border is a place where interaction between different species increases, where differences need to be negotiated, where there has to be exchange.*" (Sennett, 2012)

November.23

Paved surfaces, blind plinths and anonymous facades. The site I picked to redeveloped is a parking lot in the neighborhood of Tanthof, Delft. I picked this site because of its lack of quality, which I will later on understand through the presence of physical and social boundaries.

30.11.23 - The sociology of the elementary cell

The elementary cell is the simplest spatial structure – a mere boundary which controls the ways in which encounters are generated and controlled.

This really simple example made me realize the narrow relationship between the physical world and human behavior.

11.12.23 - The contrast

[notification] Reducing the contrast on a small scale to enhance it on a large scale. We need one to be able to live comfortably in the other.

When writing down this notification I'm trying to get a grasp on the different scales I'm researching within. My conclusion is there is not one answer - we don't either need contrast in the built environment or do not need contrast in the built environment in general. The need for contrast is dependent on the scale we're operating within.

THE ARCHITECTURE OF COOPERATION - Richard Sennet

Richard Sennet, 2012

Tanthof, Delft, 2023

WHAT IT IS...

NO SOCIAL ACTIVITY
NO CONTINUITY OF ROUTING
NO USE OF FRONTYARDS
MONOFUNCTIONAL AREA
NO USE OF BALCONIES
PAVED SURFACE
BLIND PLINTHS
POINT OF CESSATION
SEPARATE OWNERSHIP
ANONYMOUS CHARACTER OF FACADES
HARSH SEPARATION FROM WATERFRONT
BIODIVERSITY
NO USE OF ROOFTOPS
STRONG SOUTH-WEST WIND

ARCHITECTURE DETERMINES TO A SUBSTANTIAL EXTENT THE DEGREE TO WHICH WE BECOME *AUTOMATICALLY AWARE* OF OTHERS.

DE REIS.

'DE REIS ALS KENNISNAME VAN ANDERE RUIMTES IS TEVENS DE ONTDEKKING VAN HET EIGEN IK.

DE TOCHT NAAR BUITEN IS EVENZEER EEN TOCHT NAAR BINNEN.

KENNIS VAN ZICHZELF BLIJKT GEKOPPELD TE ZIJN AAN ONTDEKKING VAN DE WERELD.'

Tom Lemaire, 1970

THE SPACE OUTSIDE domain of potential strangers

THE BOUNDARY control on the category, maricates a discreetness as a category

THE SPACE INSIDE category associated with type of inhabitant

THE ENTRANCE way of establishing identity of inhabitant, means of converting stranger into visitor

INTERIOR SPACE: MORE CATEGORIC DIFFERENCE, WELL DEFINED IN RELATIONS, MORE DEFINED WHAT HAPPENS WHERE + WHO IS RELATED TO WHO

EXTERIOR SPACE: FEWER CATEGORIC DIFFERENCE, LESS DEFINED RELATIONS, LESS DEFINIED WHAT HAPPENS WHERE

Hillier & Hanson, 1984

EXTERNAL PERMEABILITY:

MORE DIFFERENCES IN ACCESS
= FEWER CONTROL
= MORE PROBALISTIC IN ENCOUNTERS
= MORE UNSTRUCTURED AWARENESS OF OTHERS.

SOCIAL ARCHITECTURE STARTS FROM THE DESIGN OF *PUBLIC SPACE - EXTERNAL PERMEABILITY*

"GOOD BUILDINGS *UNITE PEOPLE*, AROUND THE PLACE WHERE THEY ARE. THEY *INSPIRE A LOVE* FOR ONE'S SURROUNDINGS, AND SUCH A LOVE IS NEEDED, AS IT IS WHAT MOTIVATES PEOPLE *TO CARE* FOR THE WORLD THEY LIVE IN.

Alicja Gescinska, 2019

'KENNIS VAN *ZICHZELF* BLIJKT GEKOPPELD TE ZIJN AAN DE ONTDEKKING VAN *DE WERELD.*'

Tom Lemaire, 1970

Hillier + Hanson, 1984

Tom Lemaire, 1970

Hillier + Hanson, 1984

Observation author

HOW TO CREATE BORDERS?

December.23

By this phase in the research, I've adopted Richard Sennett's theory on the Architecture of Cooperation and agreed with the need for spatial borders in order to design a more socially connected environment. I'm researching the role of design in achieving this. I'm finding many conceptual spatial solutions in literature, such as "make edges more porous, execute through non-linear planning." But what does that mean spatially? I'm figuring out how conceptual solutions can be translated to the built environment. "Revisions of Space" by Dick van Gameren is one of the breakthroughs in my search. He states: *"Space and movement in architecture are related in a similar manner to mass and space. They are not opposed, but complementary. Mass enables space, space enables movement."* This opens a new direction in my research; I introduced the concept of movement.

MOVEMENT AND BORDERS

December.23

I continue to study the concept of movement through the built environement. I'm looking into different references of buildings and public spaces that either encourage or terminate movement. I discover the existence of differences are related to the presence and absence of movement. Movement can mitigate between contrasts. And movement can be designed.
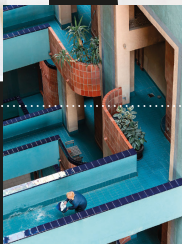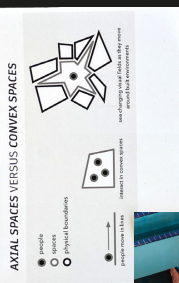
MOVEMENT AND MOBILITY

08.12.23 - from the Social Logic of Space

'The point about investing space in particular sets of relations is that this will synchronize those relations. It will cause them to be experienced as a structure of simultaneous relations. The more space is invested in these relations, the more this synchronicity will be emphasized.' [P. 93]

I discover that if I desire the nurture of interactions amongst relations through movement, I will have to design those movements to be happening automatically.
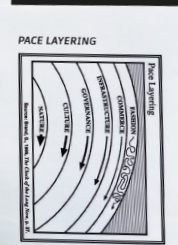
A MATTER OF PACE, PACE OF MATTER

28.12.23

Acceleration and deceleration

Acceleration and deceleration coexist. Stewart Brand's concept of "tempo layers" explains this well. The surface layer demands much of our attention, while the two deepest layers—nature and culture—move at slower paces related to memory, integration, and stability. Each layer has its own pace: fashion changes quickly, while nature changes most slowly. I'm wondering what layers I'm designing for... I realize there is no choice in layers; we will always need both acceleration and deceleration. But... where do I currently decelerate myself? Is there still space for deceleration in an environment where everything has to be fast and rushed?

Richard Sennet, 2023

Dick van Gameren, 2005

Dick van Gameren, 2005

Alison and Peter, 1956

Ricardo Bofill, 1975

Cambridge Dictionary, 2023

Stewart Brand, 1999

WIRED, 2013

I. MAKE EDGES MORE POROUS

II. PREVENT SEQUENTIAL MIXED USE, DEFINE MIXED USE.

III. EXECUTE THROUGH NON-LINEAR PLANNING

Richard Sennett, 2023
[How can we make cities more open?]

'Door de gang kunnen zeer verschillend bewoonde en gebruikte ruimtes naast elkaar bestaan. Daarmee is de gang een belangrijk ruimtelijk middel om privacy, diversiteit en dichtheid in één gebouw met elkaar te verzoenen.'

Dick van Gameren, 2005

SAMENHANG DOOR *VERSCHILLEN*

SPACE AND *MOVEMENT* IN ARCHITECTURE ARE RELATED IN A SIMILAR MANNER TO *MASS* AND *SPACE*: THEY ARE NOT OPPOSED, BUT *COMPLEMENTARY*. MASS *ENABLES* SPACE, AND SPACE *ENABLES* MOVEMENT.

AXIAL SPACES VERSUS *CONVEX SPACES*

SOCIAL ARCHITECTURE STARTS FROM THE DESIGN OF *PUBLIC SPACE - EXTERNAL PERMEABILITY*

SAMENHANG DOOR *VERSCHILLEN*

CONTINUITY – 'THE UNBROKEN AND CONSISTENT EXISTENCE OR OPERATION OF SOMETHING OVER TIME, A STATE OF *STABILITY* AND THE ABSENCE OF DISRUPTION'

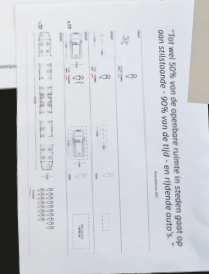CESSATION – 'THE FACT OR PROCES OF ENDING OR BEING BROUGHT TO AN *END*'

ALL KINDS OF *MOBILITY*...

PACE LAYERING

Stewart Brand, 1999

EQUALITY IN *MOBILITY*: HEBBEN - KUNNEN - WILLEN

MOVEMENT AND MOBILITY

From the subsequently exploration of movement by architecture, I discovered a symbiotic relation between movement and the identity of edges [borders/boundaries]. I translated my findings to spatial solutions which I formulated in design ambitions, strategies and principles. This formed the foundation of my design, which would from then on be present in any design decision.

MOVEMENT
AWARENESS
COHERENCE
CONNECTION
ENCOUNTERS
INCLUSION

HOW WE MOVE
WHY WE MOVE
WHEN WE MOVE
WHAT MOVES US
IF WE MOVE
WHOM WE MOVE

Scale

Alison and Peter, 1956

Movement through *a house*

Neutelings Riedijk Architects, 2010

Movement through *a building*

GaaGa, 2022

Movement through *a block*

Gemeente Eindhoven, 2023

Movement through *a neighborhood*

COBE, 2019

Movement through *a city*

EINDJE OM

Een Eindje Om is een buurtwandeling van maximaal 3-4 kilometer door en voor bewoners. De wandelingen brengen je langs bijzondere plekken, lopen over verrassende paden en nodigen uit tot spontane belevenissen, leuke ontmoetingen en lekker buiten bewegen.

Een Eindje Om is een wandeling:
op initiatief van buurtbewoners, buurtorganisaties, et cetera.
initiatiefnemer levert route en eventueel informatie en foto's aan.
met een lengte van 3-4 kilometer (ongeveer één uur wandelen).
op buurt- en of wijkniveau.
eventueel met een thema: bewegen (wandelgroep), ontmoeten (samen wandelen), spelen (route voor kinderen naar een basisschool), cultuurhistorie (architectuur), natuur (mooie bloemenweide), schoon (zwerfvuil verzamelen tijdens wandeling), et cetera.

Design ambitions, strategies & principles

By author

HOW WE MOVE

I. equal acces to mobility -
|| prioritize affordable means of mobility
|| invest in mobility by foot, by bike and by public transport

II. support sustainable means of mobility
|| create infrastructure networks for sustainable transportation
|| increase comfort of sustainable choice / decrease comfort of unsustainable choice]

The ambitions regarding **HOW WE MOVE** are illustrated by the example of Copenhagen. Copenhagen has been holding the position as the most bicycle-friendly capital since 2015. This is due to its infrastructure, making cycling both convenient, safe, and fast. Winter can get cold, but still, copenhagers tend to choose to bike. It is a matter of priority. A bicycle-centric urban planning, with investments in a safe, well-connected, and user-friendly bicycle infrastructure, has made cycling the best way to get around the city. This approach is taken as an inspiration in my design. Similarly, the lower photos from Jan Gehl's book 'Cities for People' (2010) are taken as an inspiration of how pedestrians should not be designed.

WHY WE MOVE

III. encourage local economies
|| design from routing through atmospheres
|| design space for local initiatives

IV. Increase movement for leisure
|| increase attractivity of leisure movement
|| invest in safe and continuous routes, at any time of the day

The ambitions regarding **WHY WE MOVE** are illustrated by the three examples from Rotterdam and Eindhoven. Both address the trigger for one to move. Due to urban sprawl, residents are often forced to take a car to do activities. By encouraging local economy development, travel times can be reduced and thereby costs, energy and mental stress. The Craftmenership village Makini by NRE is an example of how such local economy can be encouraged. The second ambition addresses the joy of movement. Walking is more than getting from A to B; it is also strolling through the city, getting some fresh air or enjoying a sunset. By creating routes that are continuous, people will be more likely to 'go for a walk' for the sake of joy. As movement is healthy, I desire to encourage this behaviour in my design.

WHEN WE MOVE

V. create a safe environment at any time of the day
|| design a sequential mixed use program to support social control
|| mix groups of people with different lifestyles and mix activities taking place at different moments in time]

VI. create natural flow for different types of mobility
|| define routing of each type of mobility to assure safety
|| separate fast-lanes from slow-lanes at places of intersection

The ambitions regarding **WHEN WE MOVE** are illustrated by one specific example being the Fenix I building in Rotterdam, and a few more general examples. The development of a sequential mixed-use program, rather than just a mixed-use program, will contribute to a higher degree of social control. The Fenix I building is an example of a building in which a mixed use program has been implemented.

WHAT MOVES US

VII. design movement through routing
|| design from routing through atmospheres
|| create continuous routing between different spaces, let the user be moved by the space

VIII. Increase automatic awareness of environment
|| design architecture that triggers interaction/care/consciousness
|| design elements that create interaction between building and user

The ambitions regarding **WHAT MOVES US** are illustrated by three examples. The idea of the House of the Future is over 60 years old. It was designed by Alison and Peter Smithson, with the idea of creating a continuous interior around a central patio. They desired to let the user be moved by the interior design. Similarly, in the design of the MAS in Antwerp, the movement of the user through the building is a key element in the design. Starting from ground level, the user follows the continuous route leading all the way to the roof. In the third example, the nearby walking routes are connected through the building as if the user experiences a walk in the forest. In addition to this, the natural materialisation create an automatic awareness of the environment, as the user is directly confronted with it. These are examples of how users can be moved by an environment - literally and spiritually.

IF WE MOVE

IX. discourage inactive means of mobility
|| design accessibility of 'active' mobility more easy than 'inactive' mobility
|| apply active mobility to most logical routes]

The ambition regarding **IF WE MOVE** is illustrated by the example of Utrecht Central and two examples from Jan Gehl's book 'Cities for People' (2020). The ambition is to motivate users to be more active in their daily lives, as this improves health and being. With the rise of escalators, it has become uncommon to use the stairs instead. Stairs seem to represent a genuine physical and psychological challenge for pedestrians. Ramps however, though they lack the character of the stairs, are generally prefered by pedestrians. This is an interesting element that I will take into account to design more natural active movement.

WHO MOVES US

X. encourage random encounters
|| design external permeability
|| create borderzones between closed and open space, bet-ween public and private space

XI. encourage mixing identities
|| cluster different identities
|| create borderzones between different identities

The ambition regarding **WHO MOVES US** is illustrated by the examples of 'La Serre' by MVRDV and Walden 7 by Ricardo Bofill. La Serre is an example of how humans can live closer to nature again. With over 25 percent of the building's inhabited area being dedicated to terraces and balconies, the vertical community is home to a social as well as an ecological ecosystem. The open facade creates connections among residents and with the city, fostering social sustainability. This is an example of a project in which the user can live closer to one another and to nature. The example of Walden 7 similarly focuses on the establishment of social sustainability amongst residents. Bofill had an idea of enabling interaction between residents and improving their quality of life through bridges, communal areas, and gardens at several levels. Each apartment faces both the inner courtyard as well as the exterior of the building. The large amount of exterior space allows for the placetaking of random encounters amongst residents, but still offers a sense of safety for kids to play. Nearly 45 years later, even after a diverse generation of residents populates the building. As Walden 7 never had a central owner, the residents themselves are responsible for how the building is run. Assemblies are still held and the management team is chosen by popular vote. This democratic structure has been maintained since the outset and while the euphoria of the early days has dissipated, the strong sense of community has endured.
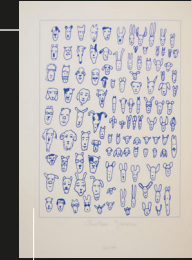
01.01.24 - Nothing is forever, except for change.

Nothing is forever, except for change. As long as we live in a world where time is ticking away, change is happening. Why would we desire to design something as if it is permanent, complete, fixed, forever…? Users change, environments change, societies change… but buildings remain stuck in time?

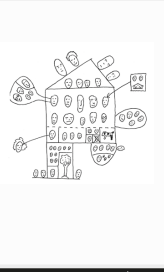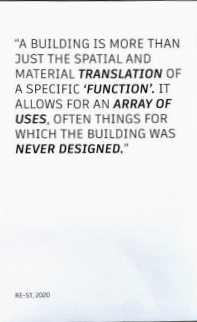As an architecture student, it is not up to me to decide on what the future is going to be like. What my task is, I believe, is to design architecture that provides the possibility for change to happen so that changing users, environments and societies can continue to inhabit and use the structure as fits their desires in a particular moment of time.

With the realisation of nothing being forever, I explored the concept of change in architecture. This led me to the exploration of flexible architectural structures within different scales. Not being stuck to any particular building volume yet, I am able to push the limits of possibilites… open to input under the filter of the prior research.

Pushing the limits of possibilities…….

…What can a city be?

Studio BELEM, 2020

Archizoom Associati, 1969-1972

…What can a house be?

Moshe Safdie, 1967

…What can a housing block be?

Andrea Branzi, 1998

…Who can users be?

WHAT MAKES A **HOUSE** A **HOME**?

What makes a *house* a *home?*

"A BUILDING IS MORE THAN JUST THE SPATIAL AND MATERIAL **TRANSLATION** OF A SPECIFIC **'FUNCTION'.** IT ALLOWS FOR AN **ARRAY OF USES,** OFTEN THINGS FOR WHICH THE BUILDING WAS **NEVER DESIGNED."**

RE-ST, 2020

VERANDERING IS DE ENIGE CONSTANTE

A LASTING TRUTH IS CHANGE

Van Abbe Museum, 2022

[ENVIRONMENT MOVES US]

NOTHING IS FOREVER, EXCEPT FOR **CHANGE.**

As long as we live in a world where time is ticking away, change is happening. Why would we desire to design something as if it is permanent, complete, fixed, forever…? Users change, environments change, societies change… but buildings remain stuck in time?

As an architecture student, it is not up to me to decide on what the future is going to be like. What my task is, I believe, is to design architecture that provides the possibility for change to happen so that changing users, environments and societies can continue to inhabit and use the structure as fits their desires in a particular moment of time.

Architects claim to understand how the future will unfold. We design certain mixes of 'target groups' and fantasize about the societal symbiose that will therefrom emerge. But there is not one human the same. An 80 year old who feels really fit and lively is labeled as 'elderly', while this label doesn't apply to the person at all. It is not accurate to label people's desires based on age, class or any other characteristic.

I therefore desire to focus beyond the individual, seeing interactions through movement as the base of architecture. From the design of fundamental connections between humans and other humans, and humans and nature, flexible and sustainable architectural structures will emerge.

Study on flexibility in housing structures

Space&Matter, 2017

BOUDEEL D(EMONTABEL)
Cepezed, 2019
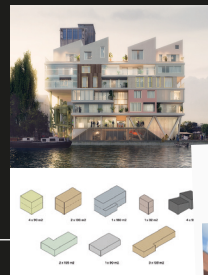
Cepezed, 2019
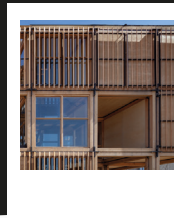
NATURE PAVILION
DP6, 2022

DP6, 2022

Marc Koehler Architects, 2022–2025

'A SUPPORT IS NOT A MERE SKELETON'

'A SUPPORT IS NOT A MERE SKELETON'

Fig. 3.1 A Support is not a Skeleton. Image courtesy of N.J. Habraken.

Stephen Kendall and Jonathan Teicher, 2022

Sophie Delhay, 2018

Kendall + Teicher, 2000

SHŌJI & FUSAMA
Interior doors and partitions
divide and re-divide rooms

ENGAWA
Covered corridor around outside perimeter
extension of the indoor space to the outdoors
transitory space

CURVY ROOFS
large surface area sheltered from rain
allow for fresh air

VALUE NATURE
In harmony with natural surrounding
mutual understanding between man-made and natural
buildings as one with the environment

WOODEN STRUCTURES
proper ventilation
durable regarding natural disasters
not covering natural beauty to the eye
refrain from using nails

ARCHITECTURE OF CHANGE:
JAPANESE ARCHITECTURE

Gaaga, 2021

PROGRAM AND SCALE

[A Phase in the Research Characterized by the Role of Design]

By analyzing references, I managed to gain a grip on the actual scale of the building on site. This provided me with insights into the desired typology of the building.

Through different studies on the program of the building, I learned about the relationship between the program and social interaction, but also social isolation. From here, I could start to imagine what different scales of the program should offer the user.

The building design started from the design of movement between the scales of the program. The design of the routing guides users from the biggest scale of the neighborhood to the smallest scale of the dwelling. The intermediate spaces are designed as mediating 'in-between spaces' that guide users as smoothly and automatically as possible in the transition from one scale to another.

By author

Study on program

WHAT MAKES A *HOUSE* A *HOME*?
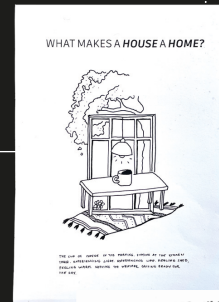
THE CUP OF COFFEE IN THE MORNING. SITTING AT THE KITCHEN TABLE. EXPERIENCING LIGHT. EXPERIENCING LIFE. FEELING SAFE, FEELING WARM. NOTICING THE WEATHER. GETTING READY FOR THE DAY.

What makes a *house* a *home*?...

COLLECTIVE

shared
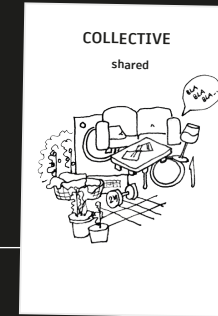
What *unites* people?....

BUILDING

public

What *bridges* the city and the landscape?...
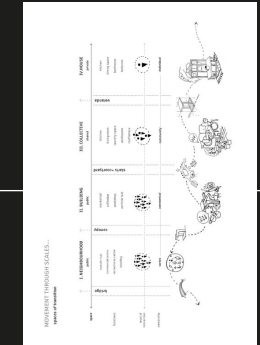
SENSE

OF

SCALE...

Unité(s) Experimental Housing
Sophie Delhay Architecture
Dijon

Pentagon
Aldo van Eyck + Theo Bosch
Amsterdam

Proveniershof
Haarlem

Habitat 67
Moshe Safdie

Het Bospad
GAAGA
Eindhoven

House NA
Sou Fujimoto
'standard rowhouse'
9mx13m
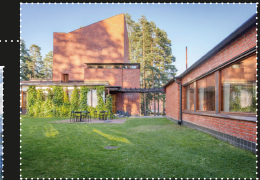
Säynätsalo Town Hall
Alvar Aalto
Finland

At the beginning of the project, I had no idea what I was going to dive into in the upcoming months. The nature, the purpose, the methodologies, and the execution of the research and design didn't exist yet. The sky was the limit, but at the same time, this absence of limits was scary. Figuring there was no other option, I just started. I began with observations, reading literature, making little sketches, discussing my thoughts with people, and developing my own way of doing so. This initial phase of the project was rough because it was impossible to concretely know what I was doing. I learned to accept this discomfort and continue working despite it. I trusted the process and was motivated to continue looking for clues and tools regarding the research. I overthought my findings over and over, which I sometimes experienced as really exciting and sometimes as absolutely draining.

As time passed, I gained understanding of the project as well as of myself. The vagueness around the project faded into the background, and I got a clear image of the issues I wanted to address. This phase of enlightenment could not have taken place without the preceding struggle. The following note was written by me while reflecting on the project in April. I think it was only by this time that I had gained enough insight into the project to write down my initial spark to perform it in words.

Space is about pace

I think my project is about space.
About the acknowledgement of its existence.
About the consciousness of its value.
About the tender approach towards it…

To reestablish the harmony between humanity and nature,
And feel beyond the constraints of our human bodies,
To see our invisible tentacles being deeply interwoven with anything living,
The further I zoom out, the more interconnected the web of life becomes.

Therefore, space is about pace.
About acceleration and deceleration,
About their coexistence - each requiring its own environment to exist.
Constantly keeping up with the pace of the rapidly changing world,

There's no space to be in the present.
No physical space without impulses, distractions, noise…
No mental space to digest.

Deceleration allows me to zoom out,
Step by step, inhale the surroundings,
Allow the natural pace to ease my momentum,
Recharge my mental and being.

June.24 - ?

We've reached the end of the assembly for now, but I'm already wondering… what is next?

Our environment is subject to constant change, and so are our ideas about it and interpretations of it. The assembly can thereore continued, with new contents being added to the existing content or with new contents extending the timelime. By me, by you or by anyone else. I invite you to philosophize, experiment and design. *The future is yours.*

LOOKING BACK...

Reflecting on the graduation, I see the project as a journey marked by various experiences, as I visualized in Figure A. Together, these experiences have shaped the position I'm currently at.

The booklet I created reveals a strongly interwoven connection between research and design. Physically, the booklet doesn't have a front or back but is unfoldable as a whole. The 'story of the design' is explained on one side of the booklet, and the 'story of the research' on the other. This format of presenting the content enhances their interdependence; what I researched on one hand was applied in the design, and what I discovered while designing enriched the research on the other. They are thus standing back to back—conceptually and in the booklet, literally.

My research finds its origin in a personal observation of isolation among humans, from which a fascination for social architecture developed. This initiated research on the relation between architecture and human behavior: anthropology in architecture. Through this, I explored how physical boundaries within architecture can influence human behavior. At the same time, I started exploring the area of Midden Delfland and Tanthof as part of the design challenge. Within the plan of ZUS envisioning a future within 100 years for the area of Midden Delfland, a constraint on urban expansion was proposed. From this, an 'edge' between the city and the landscape would emerge, creating a new

P4

COMMUNICATION

VALIDATION

P3

DETAILS

MASS STUDIES

SHAPING THE CONCEPT

P2

CONCEPT

DESIGN FOUNDATION

CASE STUDIES

EXPLORATION OF PERSONAL TOPIC OF INTEREST

P1

MASTERPLAN (+ choice of site)

DISCUSSIONS, TUTORING SESSIONS, INPUT

GROUP WORK

SITE VISIT

START ASSEMBLY   LOTS OF READING

FIRST IDEAS ...

reflection

presentation, booklet, short film, drawings

target groups, floorplans, construction, flexibility, climate design, materials, ownership

orientation, functionality

bridging the boundary

ambitions, strategies, principles translation theory to practice

how to design movement?

movement by architecture

borders + boundaries anthropology in architecture

'The edge' Tanthof!

feedback from mentors

conversations and discussions

analysis research social inclusion

literature studies exploration social sciences

taking notes filming the environment doing observations

type of space 'in between'. With my research being about borders and boundaries, the challenge of reimagining this 'in-between' space offered me a chance to test the theories I researched and apply them in a design.

From the subsequent exploration of movement by architecture, I discovered a symbiotic relation between movement and the identity of edges [borders/boundaries]. I translated my findings to spatial solutions which I formulated in design ambitions, strategies, and principles. This formed the foundation of my design, which would from then on be present in any design decision. Throughout the following steps in designing, I was continuously referring back to the foundation I built, validating if the design steps taken were corresponding. I thereby didn't distinguish the processes of research and design as separate from each other but rather encountered them as being interconnected. I continued to explore the ideas formulated in the foundation further by conducting research and by experimenting in design. I bundled my findings into the format of a catalog, presented in 'the assembly of ideas'. This catalog presents a conceptual timeline of my graduation and illustrates the cohesive relation between the research and the design.

My approach developed along the graduation. Rather than planning an approach beforehand, I decided what would suit the assignments I was facing best. This has led to a creative and original output that I could never have designed beforehand. I think my approach has been successful because I managed to successfully translate spatial and societal challenges into a design responding to these. By setting high ambitions, I designed an innovative concept that creates high value in a relatively small area—also being applicable to many other locations in the Netherlands.

During my graduation, my mentors in Research [Alejandro Campos], Architecture [Robbert Guis], and Building Technology [Stephan Verkuijlen] supported me throughout the project. These sessions were really helpful. Even though I was always attempting to follow and trust my own path of direction, talking with my mentors really inspired me to dig deeper into my research and make stronger design choices. They asked tough questions that pushed me to work harder, and came up with suggestions from their own knowledge, from literature, and from reference projects that have been very inspiring.

The final products I will deliver are a booklet in which the initial research plan, an unfoldable map of the research and design, and drawings of the design are presented [this booklet]. Furthermore, the prints are captured in a separate paperback. In addition to this, I will deliver a short film introducing my project, a final presentation, and a foldable 3D model.

I really enjoyed the journey I've gone through in the past year, and I can't wait to discover what the future holds. I'm grateful for having gotten the opportunity to conduct this project, and excited to start applying my skills in the work field.

.. AND FORWARD!

THE DESIGN

THE ABSENCE OF EDGES

Deltas worldwide are struggling with the challenges of climate change, increasing urbanization and spatial pressure on rural areas. In the Dutch Delta we are facing three main challenges. Though these differ in subject, they overlap in one theme: all three have become **spatial questions.**
Firstly, the gradual sinking of land along with rising of sea levels form a major threat, which leads to a smaller amount of locations that are safe to inhabit. Aside of this, we aim to mitigate climate change by transitioning to renewable energy and by increasing biodiversity, which each require space. In addition to this, the shortage of suitable housing acquires space for development.

We need to design our cities in favor of tackling the major challenges to create a sustainable living environment in the Netherlands. Therefore, the way we *use our space* is becoming increasingly important. Urban sprawl in the Netherlands has lead to

continuous expansion of our cities without borders. Of the nearly 8 million dwellings in the Netherlands, 42% are rowhouses. This typology occupies a significant amount space – also including connection to infrastructure, electricity, sewage and facilities – in relation to the amount of people living there. With the spatial questions of our time we can no longer justify this way of building. This means we will have to halt the continuous expansion of our cities by imposing an expansion limit—a constraint for urban development, a border between the urban and the non-urban environment.

ENVIRONMENTAL
THREATHS

MITIGATING
CLIMATE CHANGE

HOUSING CRISIS
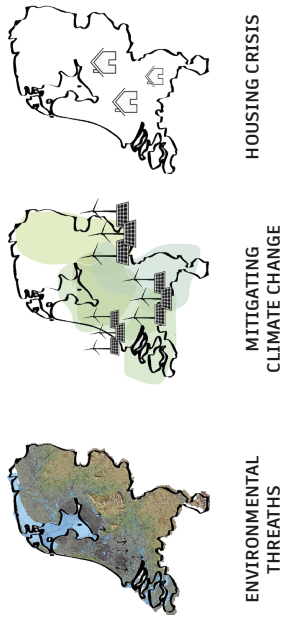
figure 1: visualisation of challenges in the Dutch Delta

THE AREA OF MIDDEN-DELFLAND

The office of ZUS has researched a design approach tackling the major challenges in the Netherlands, and studied the area of Midden Delfland. The area of Midden Delfland is a large open peat meadow landsape surrounded by the cities of Rotterdam, The Hague and Delft. This area is currently one of the most densely populated areas in the Netherlands which leaves the remains of the open territory under high pressure. The proposal of ZUS envisions a future for Midden-Delfland in 100 years. With the expectation there will be times of excess precipitation and times of drought, ZUS proposes to divide the open landscape into several zones with floodable areas, whereby the open landscape can the function as a water buffer. At the same time, the population growth within the surrounding cities which will raise the necessity for surrounding nature, water and clean air. ZUS envisions Midden-Delfland to become a green lung, securing the livability of surrounding cities. They propose a dike around the area of Midden-Delfland, protecting the surrounding cities from flooding and creating an expansion limit for the surrounding cities. In

their plan however, they don't elaborate on how to design this dike, neither do they define the space between the urban and the non-urban environment. Through research and design, I explored and constructed my vison on how this edge could exist and operate.
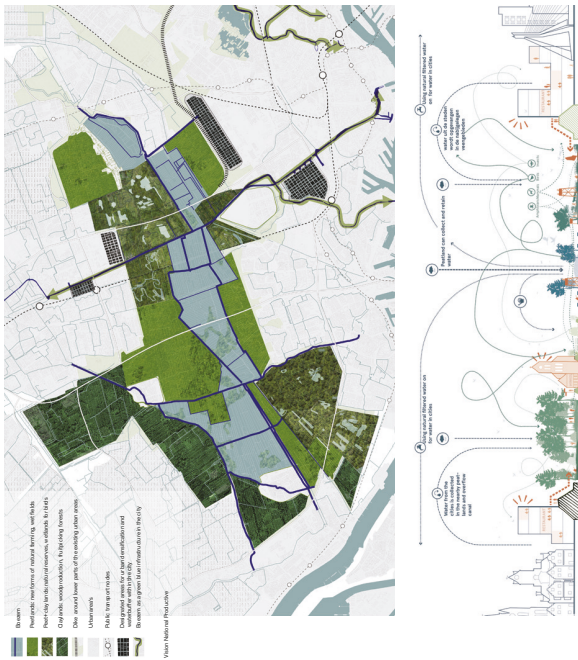

figure 2: Plan of ZUS (Redesigning Deltas, 2022)

EDGES NEED TO BE DESIGNED

From the current situation it appears we don't know yet **how** to design edges. The edges in urban expansion that are proposed are commonly overriden and relocated as soon as a site for a new project is needed. Appearantly, the value of the space as an edge is minor to the value of the space as a site for new development. In order to justify the existence of edges in the built evironment, this space has to become a space of value. Therefore, edges need to be designed.
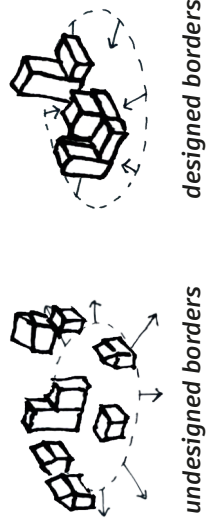

undesigned borders   **designed borders**

figure 3: visualisation of urban development

An edge in principle can only exist from a contrast between two identities, as pictured in figure 4. Thereby the design of an edge starts by identifying a contrast: what is happening on one hand of an edge and what is happening on the other? From this distinction between one identity and another, an edge emerges.
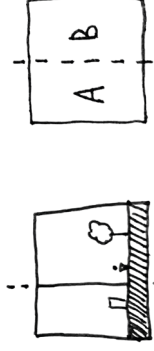
figure 4: the existence of an edge

In case of the limitation of urban expansion, the contrast between the urban environment [the city] and the non-urban environment [the landscape] defines the edge: 'what is happening inside the city, and what is happening inside the landscape?' To make these questions more applicable I broke them down into activities, transportation modes and facilities. The concluding illustration is displayed in figure 5.

EDGES THAT *DISCONNECT*

As illustrated conceptually in figure 6, I imagine the activities, transportation modes and facilities in the city to differ strongly from those in the landscape. I imagine the environment in the city to be a busy, vibrant, high-end environment, in which connections are quick and facilities are closeby. I imagine the environment in the landscape on the other hand to be more quiet, raw and relaxing, whereby the pace of movement and its corresponding infrastructure is slow. Creating these differences results in a stronger character of both the city and the landscape; their qualities are enhanced. Where both identities touch, an edge forms.

As is evident in the outskirts of Dutch neighborhoods, this edge poses a significant challenge. The harsh separation between the city and the surrounding landscape often causes us to overlook its presence in our daily lives. It's not that we lack interest in experiencing the landscape; rather, it simply doesn't register on our radar due to its absence from our immediate surroundings. Consequently, we remain unaware of its proximity and are unlikely to explore it. This oversight means that the valuable qualities of the nearby environment remain hidden from the public eye, tough it's offering benefits that many might need. Motivated by this observation, I began to question why this connection has been lost, and how it could be reestablished to create a mutual relationship between the city and the landscape, fostered by automatic awareness of one another. Through my research, I discovered **how** to bridge the gap between these contrasting identities.

To illustrate my findings, I broke them down into a very simple example: The crossing of a busy street. One side of the street is one identity - is this case *the city* - and the other side is another - in this case *the landscape*. What is the only way of getting from one side

EDGES THAT *CONNECT*

to the other? Exactly, by crossing. *Movement over an edge is the only way to pass it.* However, we are unlikely to do so if we are not aware of *'what's behind'*. The spaces in between the city and the landscape have most commonly not been defined or designed - the urban environment just abruptly stops, and there is no defined connection to the landscape. This has caused edges to become places of cessation and inactivity, also defined by Richard Sennet[1] as ***boundaries.*** Back to the example: Imagine the space between the city and the landscape as a lively boulevard instead of a busy street. Would people then feel more invited to cross it? Quite likely, yes. In case of the edge between the city and the landscape this means that if we are naturally made aware of the landscape while still in our urban environment, we are more likely to access it. This is because we recognize its presence, its closeness, and its accessibility. We should envision the area between the city and the landscape as a space of transition. Movement acts as the adhesive linking these two identities. Through movement between them, interaction and connection are fostered. Therefore, transitioning from one environment to the other should be simple and natural. The edge becomes an 'extended treshold' in which differences blur, also defined as a ***border***[1]. This principle is illustrated in *figure 6.*
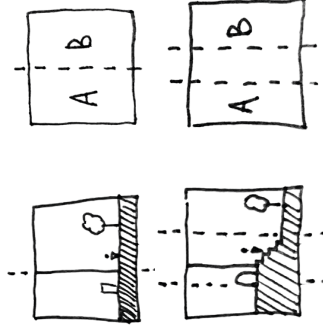

figure 6: the edge as a boundary (top) and the edge as a border (bottom)

1. Sennet, R. (2012). *The Architecture of Cooperation*. **[P1 paper]**

MOVEMENT CREATES BORDERS (and vice versa...)

Movement between the city and the landscape initiates connection and interaction, blurring differences and giving rise to a border zone. Conversely, a border zone encourages movement across the edge. The relationship between the design of *movement* and the design of *borders* is thus self-fulfilling and symbiotic: one cannot exist without the other, and enhancing one improves the other. Recognizing this, I realized that to design one, I must also consider the other, and vice versa.

MOVEMENT ⟷ BORDERS

figure 7: the mutual relationship between movement and borders

By organising movement, I can facilitate interaction and connection among differences, thereby shaping border zones. Through the design of border zones, I can orchestrate the desired interaction and connection, thereby promoting movement. This concept reaches beyond the difference between the city and

the landscape – it concerns the mitigation of differences between people and planet in admiration of a sustainable and resilient living environment in which everything collaborates as one ecosystem.

This revelation formed the foundation of my design approach. I outlined eleven design ambitions, principles, and strategies from translating movement to *spatial solutions*. Through understanding how we move, why we move, when we move, what moves us, if we move and whom moves us, I envision a spatial reality dominated by borderzones.
In *figure 8* on the following pages, this foundation is displayed. The design ambitions, principles, and strategies are listed at the top of each page. The subsequent reference projects serve as examples demonstrating how these ambitions are already being realized today, confirming their feasibility. I imagine the design to become an integrated collage of the applied ambitions.

WHY WE MOVE

III. encourage local economies
‖ minimize travel time to primary needs
‖ design space for local initiatives

IV. increase movement for leisure
‖ increase attractivity of leisure movement
‖ invest in safe and continuous routes, at any time of the day

Craftsmenship village
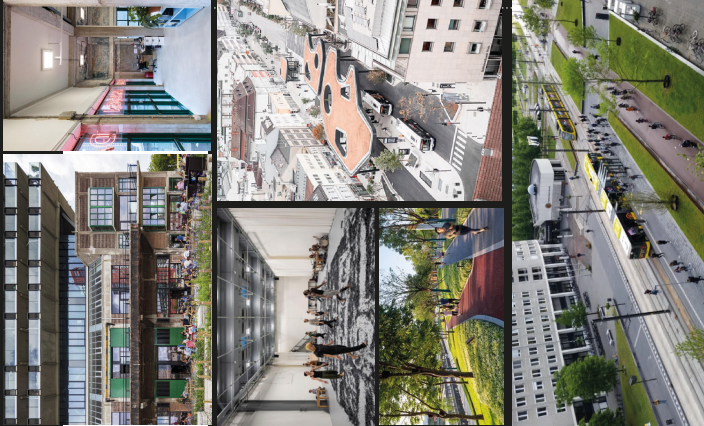Made by NRE, Eindhoven
Rondje Rijnhaven, MVVA

The ambitions regarding **WHY WE MOVE** are illustrated by the three examples from Rotterdam and Eindhoven. Both address the trigger for one to move. Due to urban sprawl, residents are often forced to take a car to do activities. By encouraging local economy development, travel times can be reduced and thereby costs, energy and mental stress. The Craftsmenship village Made by NRE is an example of how such local economy can be encouraged. The second ambition addresses the joy of movement. Walking is more than getting from A to B: it is also strolling through the city, getting some fresh air or enjoying a sunset. By creating routes that are continuous, people will be more likely to go for a walk for the sake of joy. As movement is healthy, I desire to encourage this behaviour in my design.

figure 8: exploration of movement

HOW WE MOVE

I. equal acces to mobility -
‖ prioritize affordable means of mobility
‖ invest in mobility by foot, by bike and by public transport

II. support sustainable means of mobility
‖ create infrastructure networks for sustainable transportation
‖ increase comfort of sustainable choice / decrease comfort of unsustainable choice]

Copenhagen urban Structures

Jan Gehl, Cities for People, 2010

The ambitions regarding **HOW WE MOVE** are illustrated by the example of Copenhagen. Copenhagen has been holding the position as the most bicycle-friendly capital since 2015. This is due to its infrastructure; making cycling both convenient, safe, and fast. Winter can get cold, but still, copenhageners tend to choose to bike. It is a matter of priority. A bicycle-centric urban planning, with investments in a safe, well-connected, and user-friendly bicycle infrastructure, has made cycling the best way to get around the city. This approach is taken as an inspiration in my design. Similarly, the lower photos from Jan Gehl's book 'Cities for People' (2010) are taken as an inspiration of how pedestrians should not be designed.

Wonderful Copenhagen, 2024

WHAT MOVES US

VII. design movement through routing
|| design from routing through atmospheres
|| create continuous routing between different spaces, let the user be moved by the space

VIII. increase automatic awareness of environment
|| design architecture that triggers interaction/care/consciousness
|| design elements that create interaction between building and user

The ambitions regarding *WHAT MOVES US* are illustrated by three examples. The idea of the House of the Future is over 60 years old. It was designed by Alison and Peter Smithson, with the idea of creating a continuous interior around a central patio. They desired to let the user be moved by the interior design. Similarly, in the design of the MAS in Antwerp, the movement of the user through the building is a key element in the design. Starting from ground level, the user follows the continious route leading all the way to the roof. In the third example, the nearby walking routes are connected through the building as if the user experiences a walk in the forest. In addition to this, the natural materialisation create an automatic awareness of the environment, as the user is directly confronted with it. These are examples of how users can be moved by an environement – literally and spiritually.

Het Bospad, Gaaga, 2022

WHO MOVES US

X. encourage random encounters
|| design external permeability
|| create borderzones between closed and open space, between public and private space

XI. encourage mixing identities
|| cluster different identities
|| create borderzones between different identities

The ambition regarding *WHO MOVES US* is illustrated by the examples of 'La Serre' by MVRDV and Walden 7 by Ricardo Bofill. La Serre is an example of how humans can live closer to nature again. With over 25 percent of the building's inhabited area being dedicated to terraces and balconies, the vertical community is home to a social as well as an ecological ecosystem. The open facade creates connection among residents and with the city, fostering social sustainability. This is an example of a project in which the user can live closer to one another and to nature. The example of Walden 7 similarly focuses on the establishment of social sustainability amongst residents. Bofill had an idea of enabling interaction between residents and improving their quality of life through bridges, communal areas, and gardens at several levels. Each apartment faces both the inner courtyard as well as the exterior of the building. The large amount of exterior space allows for the placetaking of random encounters amongst residents, but still offers a sense of safety for kids to play. Nearly 40 years later, a more diverse generation of residents populates the building. As Walden 7 never had a central owner, the residents themselves are responsible for how the building is run. Assemblies are still held and the management team is chosen by popular vote. This democratic structure has been maintained since the outset and while the euphoria of the early days has dissipated, the strong sense of community has endured.

Walden 7, Ricardo Bofill, 1975

WHEN WE MOVE

V. create a safe environment at any time of the day
|| design a sequential mixed use program to support social control
|| mix groups of people with different lifestyles and mix activities taking place at different moments in time

VI. create natural flow for different types of mobility
|| define routing of each type of mobility to assure safety
|| seperate fast-lanes from slow-lanes at places of intersection

The ambitions regarding *WHEN WE MOVE* are illustrated by one specific example being the Fenix I building in Rotterdam, and a few more general examples. The development of a sequential mixed-use program, rather than just a mixed-use program, will contribute to a higher degree of social control. The Fenix I building in an example of a building in which a mised use program has been implemented.

Fenix 1, Mei Architects

IF WE MOVE

IX. discourage inactive means of mobility
|| design accessibility of 'active' mobility more easy than 'inactive' mobility
|| apply active mobility to most logical routes]

The ambition regarding *IF WE MOVE* is illustrated by the example of Utrecht Central and two examples from Jan Gehl's book 'Cities for People' (2010). The ambition is to motivate users to be more active in their daily lives, as this improves health and mental being. With the rise of escalators, it has become uncommon to use the stairs instead. Stairs seem to represent a genuine physical and psychological challenge for pedestrians. Ramps however, though they lack the character of the stairs, are generally preferred by pedestrians. This is an instresting element that I will take into account to design more natural active movement.

Jan Gehl, Cities for People, 2010

LIVING ON THE EDGE!

The constraint on urban expansion and the resulting creation of designed edges present a significant *opportunity* to reestablish the connection between the city and the landscape. I designed a building on a site located within the plan of ZUS that was discussed at page two of THE DESIGN which addresses these opportunites. The building is a combination of public functions and dwelling, a highly concentrated core of spatial value in a monofunctional environment: a *Central Spark.* By implementing Central Sparks in Dutch neighborhoods we can enlighten them, and boost their value. From the larger scale of the neighbourhood, to the smaller scale of the building I will guide you through the design.

In the plan of ZUS, the Midden Delfland area was envisioned to evolve into a 'National Productive Park', as depicted in *figure 10*. Their vision was organized around five themes: *water, food, recreation, nature,* and
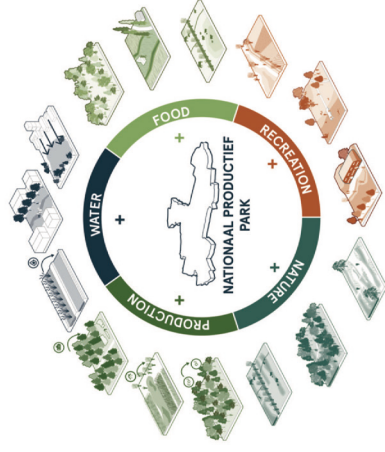
production. Building upon this framework and considering the edge condition resulting from the sharp contrast between the busy environment of the city and the resilient environment of the landscape, I introduced a sixth theme to the ZUS vision: *well-being.* I envision the Midden-Delfland area to not only facilitate physical interaction with the city, but also to contribute to the mental well-being of its inhabitants. This ambition is addressed in the sixth theme. In the
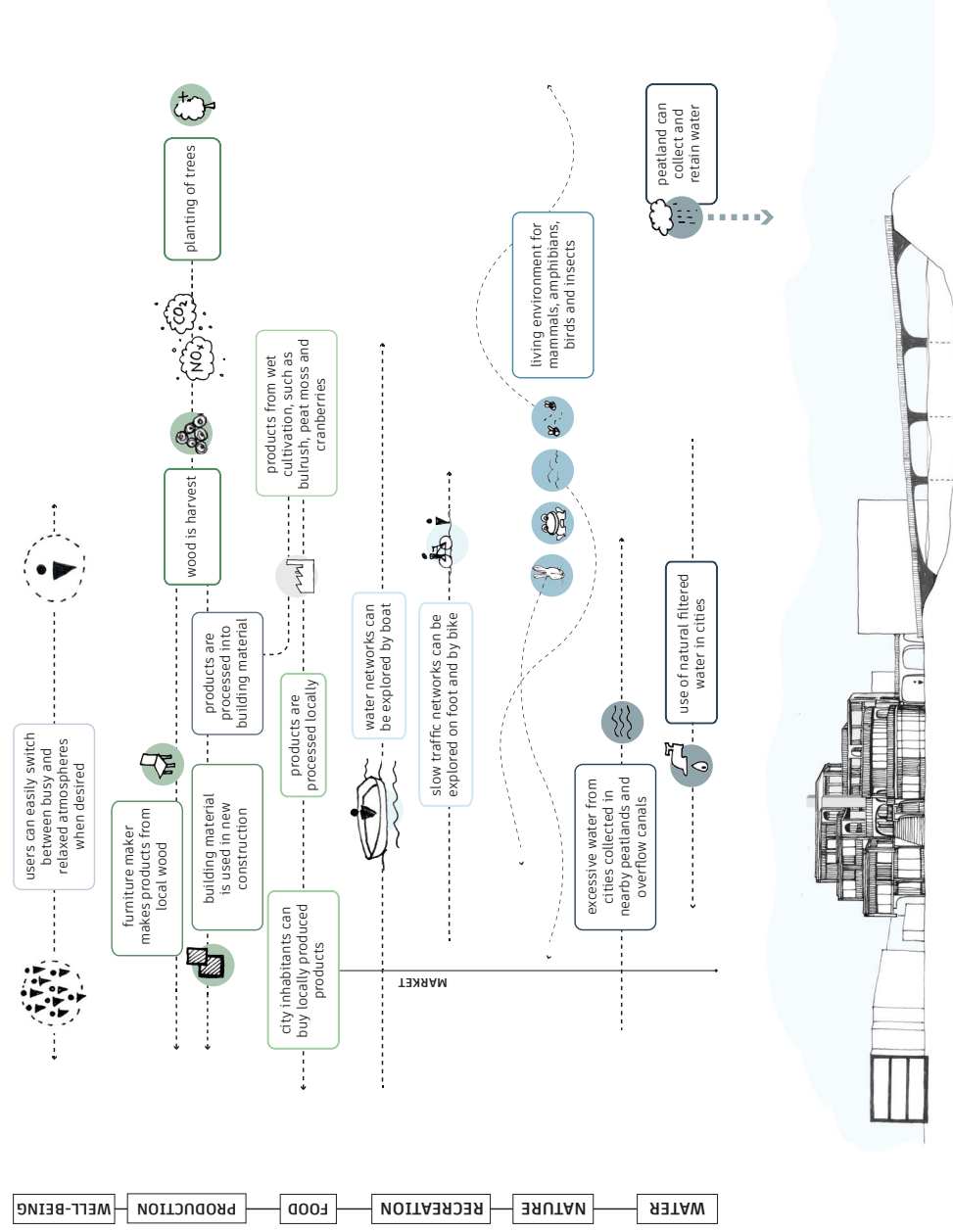

figure 10: operational system section city + landscape

figure 9: operational system section city + landscape

figure 11: site photographed from city view

figure 12: site photographed from landscape view

operational system section in *figure 9*, I combined the vision of ZUS with my personal vision on the area of Midden Delfland. The section evidently displays the vision of a symbiotic relationship between the city and the landscape. In this way, they will benefit one another – they cooperate – which creates a sustainable and future proof environment.

The building site is situated on a parking lot within the Thanthof neighborhood. As visible in *figure 13*, the site is located exactly on the current edge between the urban outskirts of Delft and the landscape of Midden Delfland. The location of this site therefore perfectly suits my ambition of reimaginening the potential of edges of urban expansion to reestablish the connection between the city and the landscape. Presently, the site is isolated, being a dead-end in movement and marking the outskirts of the neighborhood. The parking lot creates a sense of cessation, a space devoid of interaction. In *figure 11*, the view from the city on the site is depicted. The current state of the site has been

BUILDING A BORDER

figure 13: topview of site located in the neighborhood of Tanthof

NO SOCIAL ACTIVITY
NO CONTINUITY OF ROUTING
NO USE OF FRONTYARDS
MONOFUNCTIONAL AREA
NO USE OF BALCONIES
PAVED SURFACE
FRONTYARD VIEW AT PARKING LOT
BLIND PLINTHS
SEPARATE OWNERSHIP
ANONYMOUS CHARACTER
NO USE OF FACADES
POINT OF CESSATION
INTERNAL CIRCULATION
HARSH SEPARATION
LACK OF BIODIVERSITY
NO USE OF ROOFTOPS
FROM WATERFRONT
STRONG SOUTH-WEST WIND
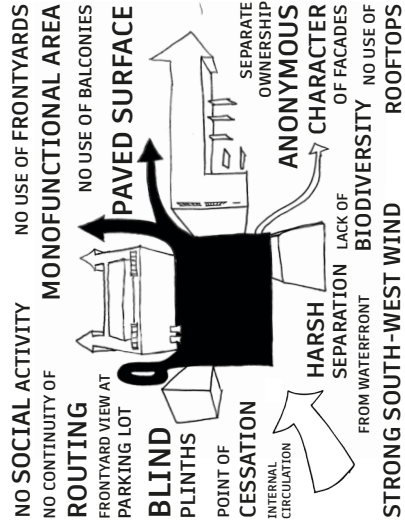
figure 14: visualization of current situation on site

NATURAL LANDSCAPE
IN HARMONY WITH NATURE
SOCIAL SPACE
ACCESSIBLE
SUSTAINABLE ENERGY
FUN
CONTINUITY OF ROUTING
FOOD PRODUCTION
BIODIVERSITY
FUTURE PROOF
ALIVE
INCLUSIVE
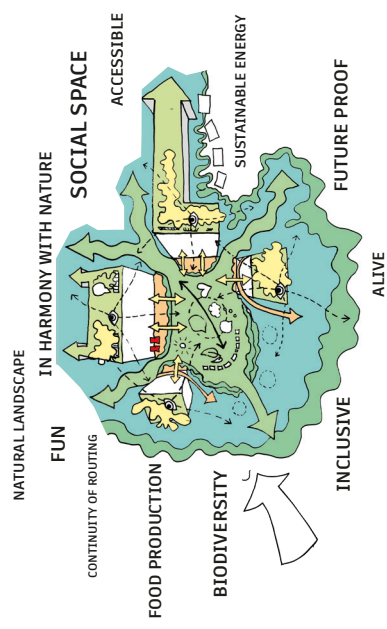
figure 15: visualization of oppportunities on site

boundary

b o r d e r ?

figure 16: abstraction of transformation from boundary to border

analyzed and summarized as shown in *figure 14*. Especially the function of a parking lot, the blind plinths of the towers, the cessation of routing and the harsh strong south-west wind create a very unpleasant atmosphere on site. Simultaneously, the site shares a direct border with the beautiful area of Midden Delfland. In *figure 12*, the opposite view from the landscape to the site is shown. In *figure 13* I've illustrated my vision on what the site could become. With the increase of the Dutch population a location like this, directly bordering a natural environment, is becoming increasingly extraordinary in the Netherlands. However, this connection remains hidden when approaching the site from the city, deterring visitors from exploring the landscape area. As a result, users currently perceive a **boundary** between the city and the landscape.

The constraint on urban expansion and the resulting creation of designed edges present a significant *opportunity* to reestablish the connection between
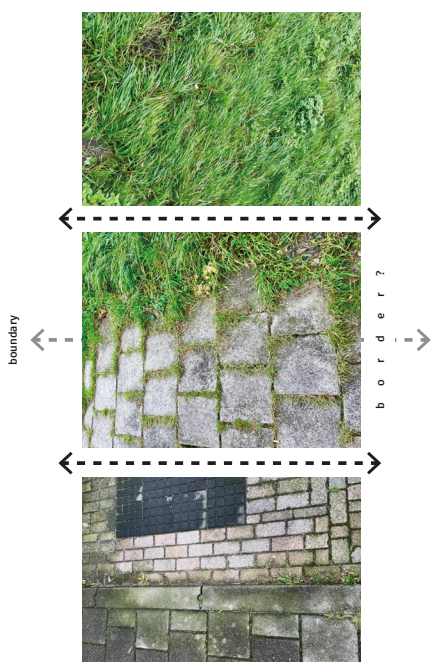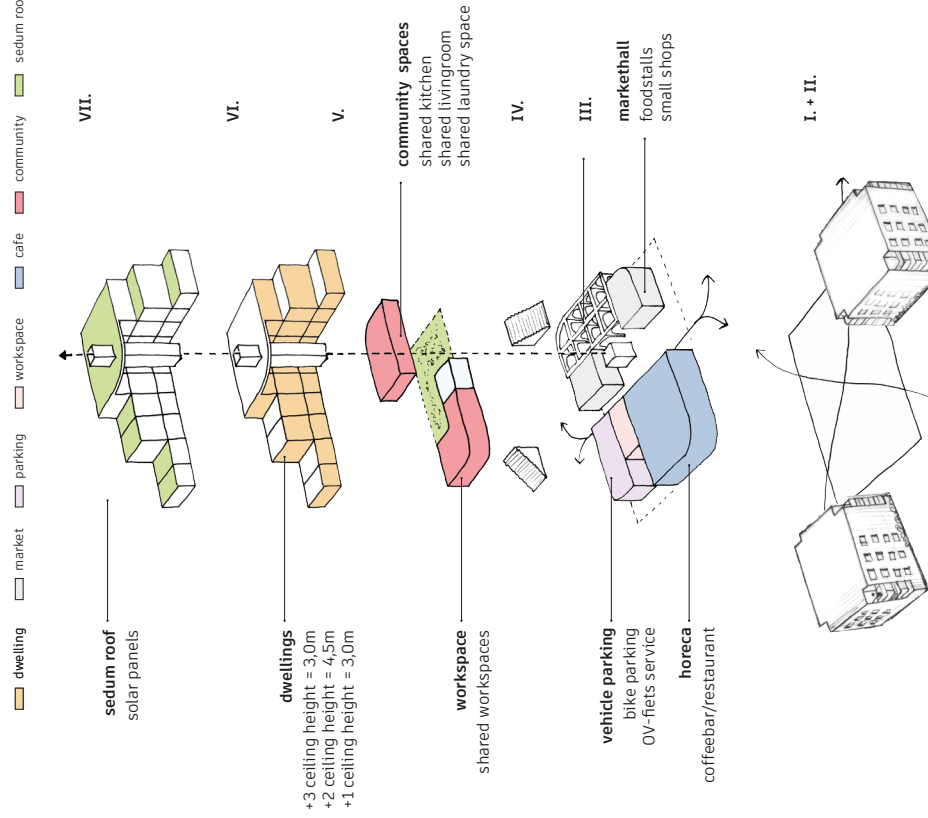
the city and the landscape. In order to reestablish the connection between the city and the landscape and thereby create and fulfill the opportunities of designed edges, the boundary edge condition has to be transformed into a border edge condition. In *figure 16*, an abstraction of this transformation is pictured. The building I designed is supporting this transformation. Envisioning the area as a border zone means the space becomes a space of transition between the city and the landscape. Through

BUILDING CONCEPT

dwelling | market | parking | workspace | cafe | community | sedum roof

sedum roof
solar panels

VII.

dwellings
+3 ceiling height = 3,0m
+2 ceiling height = 4,5m
+1 ceiling height = 3,0m

VI.

community spaces
shared kitchen
shared livingroom
shared laundry space

V.

workspace
shared workspaces

IV.

III.

markethall
foodstalls
small shops

vehicle parking
bike parking
OV-fiets service

horeca
coffeebar/restaurant

I. + II.

VII. ENABLES
The with sedum covered 'breathing roofs' of the building provide the building of solar energy, assure a better retention of water and contribute to the mitigation of urban heat in the direct

VI. ADJUSTS
The modular unit framework allows for simple adjustments in the building over time

V. UNITES
The inclusion of community spaces encourages the development of social cohesion

IV. INVITES
The stairs connect the building to the landscape whereby the building volume opens to the user

III. PROVIDES
The program offers users an attractive living environment with a high variety of functions within close reach, and facilitates a smooth transition between city and landscape

II. PROTECTS
The elevated building typology protects dwellings in case of emergency flood

I. CONNECTS
The routing through the plinth of the building establishes the connection city and landscape

figure 17: layers of the building concept

movement between them, interaction and connection are fostered. Therefore, transitioning from one environment to the other should be simple and natural, in which the building can facilitate, support and guide users. The fulfillment of this ambition in the design is shown in the first bullet (I.) in *figure 17*. Furthermore, the dwellings have been raised from ground level to assure safety in case of an emergency flood (II.). The plinth can thereby facilitate a programmatic cooperation between the city and the landscape, and at the same time offer a high variety of functions to residents which contributes to a more locally organized economy. Goods from the land can be sold in the market hall, the vehicle parking space facilitates the transition between different transportation types, and the coffeebar creates a perfect meeting hub for people to meet in between city and landscape - when going for a walk together for example (III.). On the first level, the dwellings are centered around a communal courtyard. The

stairs connecting the courtyard to ground level create a smooth transition between 'outside' and 'inside', and at the same time invite the public to enter the courtyard (IV.). The highly qualitative community spaces are situated along the common walking routes which contributes to automatic awareness of one another amongst residents, and offers them a space to spend time together (V.). Furthermore, the dwellings have been executed in a wooden skeleton construction to assure flexibility of the structure towards the future (VI.). Finally, the with sedum covered 'breathing roofs' of the building provide the building of solar energy, assure a better retention of water and contribute to the mitigation of urban heat in the direct surroundings. In addition to this, the solar chimney assures a passive flow of fresh air through the dwellings (VII.). Through these seven steps, I created a volume being a direct response to the posed challenges and to its location on site. *Figure 18* illustrates how the volume blends in with its surroundings.
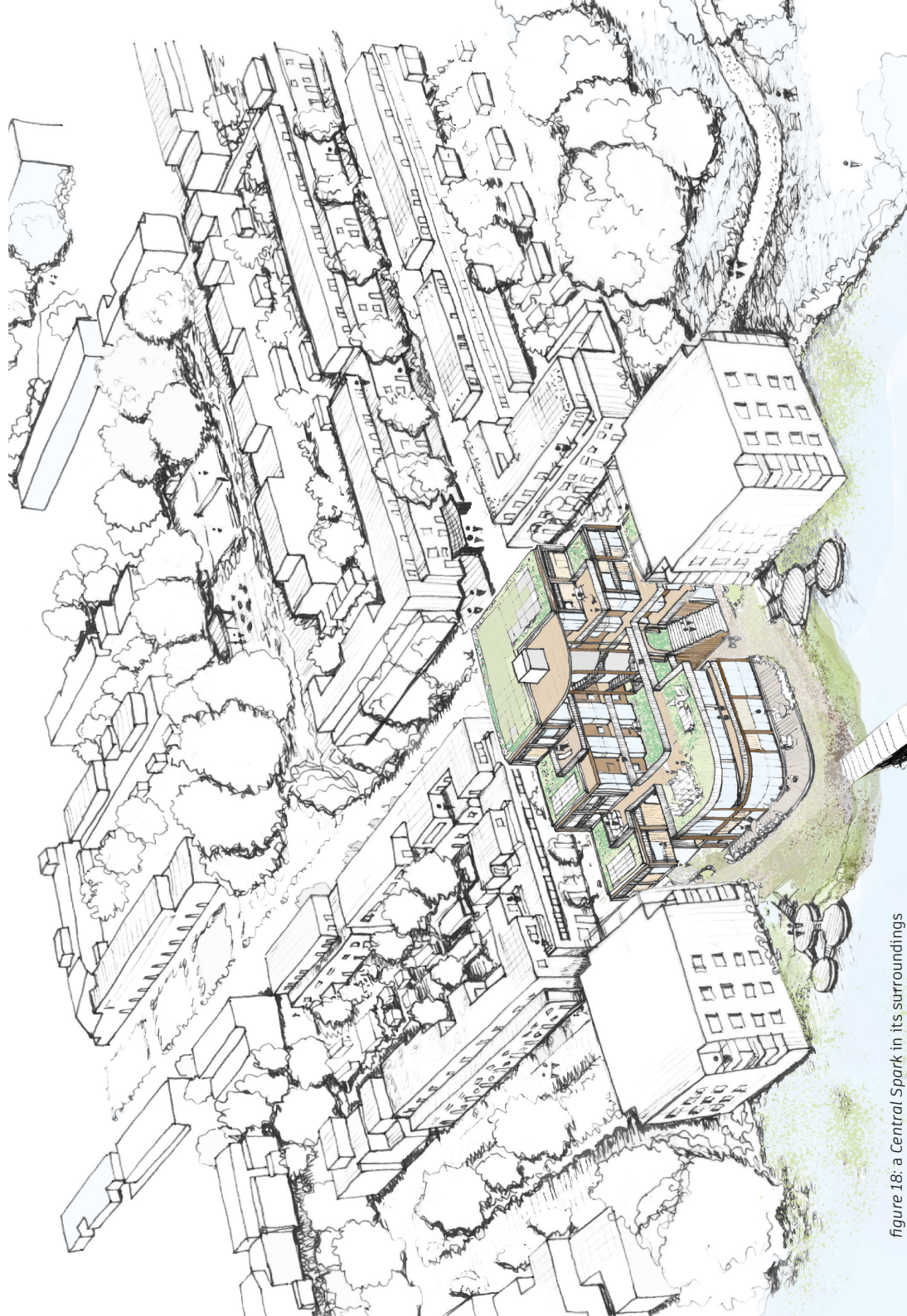

figure 18: a Central Spark in its surroundings

In figure 19 the lifecycle of the building through time is explained. It illustrates how sustainability is integrated in every phase of the buildings life cycle. The construction exists of wood, as this is a renewable and CO2-neutral building material. When the building is demolished I imagine the building parts to be re-used either in their current shape, or re-used in a newly manufactured shape, like insulation material. In *figure 20*, some key elements in the materialisation of the design are shown. I thereby wrap up this brief explanation of the design. I've shown how the reconnection of city and landscape and thereby revival of Dutch neighbourhoods can be achieved by implementing **Central Sparks.** *What are we waiting for?!*

SOURCING
① Import of wood from German woodproduction forests
② Additional local forest production

PROCESSING
③ Transport to and arrival at wood processing factory
④ Debarking of tree trunks
⑤ Sawing from tree trunk to constructive wood
5a Woodfibres as byproduct of sawing
5b Fabrication of woodfibres into woodfibre insulation
6a Processing of wood into desired dimensions
7a Construction of facade carrier
8a Design of facade infill through catalog

6b Drying and dimensioning sawed wood
7b Assembly of CLT-panel
8c Processing of CLT-panel into desired dimensions

CONSTRUCTING
9 Assembly of prefab building elements
10 Mounting of constructive joints
11 Placement of CLT floor and wall elements
12 Placement of facade elements

USE
13 Use of the building by residents and visitors
14 Re-configuration of building elements

DECONSTRUCTION
15 Disassembly of building parts
16 Transportation to factory or to new building site
17 Processing at wood processing factory
18 Breakdown of wood to woodfibres

RE-USE
19 Fabrication of CLT into MDF
4a Fabrication of CLT into woodfibre insulation

figure 19: Lifecycle of a Central Spark

solar chimney

bamboo balustrade

vuren skeleton construction

cross laminated timber columns

figure 20: longitudinial section

PROJECT CREDENTIALS

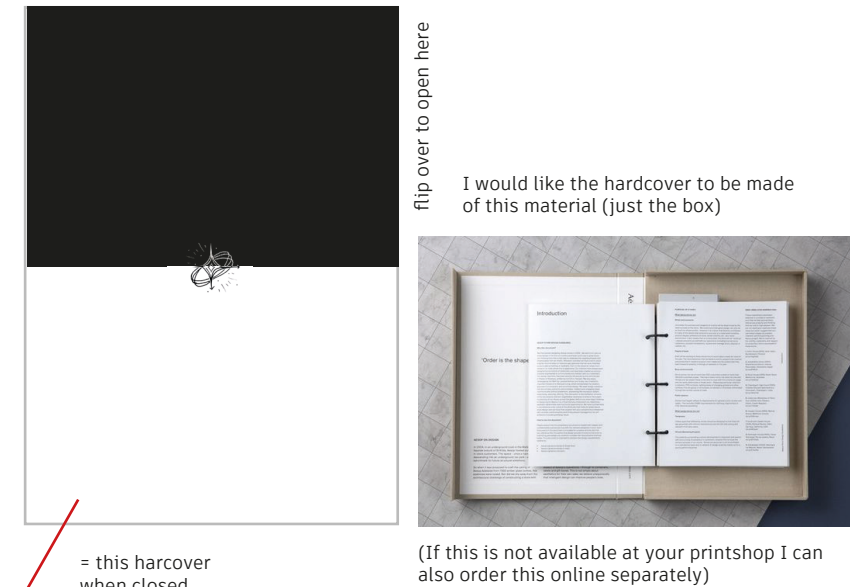Title: *CENTRAL SPARK*

Location: **Tanthof, The Netherlands**

Author: **Jolie Nena Tops**

Duration: **Sept 2023 - June 2024**

University: **Delft University of Technology**

Track: **Msc. Architecture**

Studio: **Dwelling - Advanced Housing Design**

Turtors: **Robbert Guis**
                 Stefan Verkuijlen
                 Alejandro Campos

BOOKLET STEP BY STEP

① protection cover

if possible I would like the protection cover to be completely transparent, if not I would like it as displayed underneath

opening of front through which you can see the logo

hardcover inside, take out by sliding
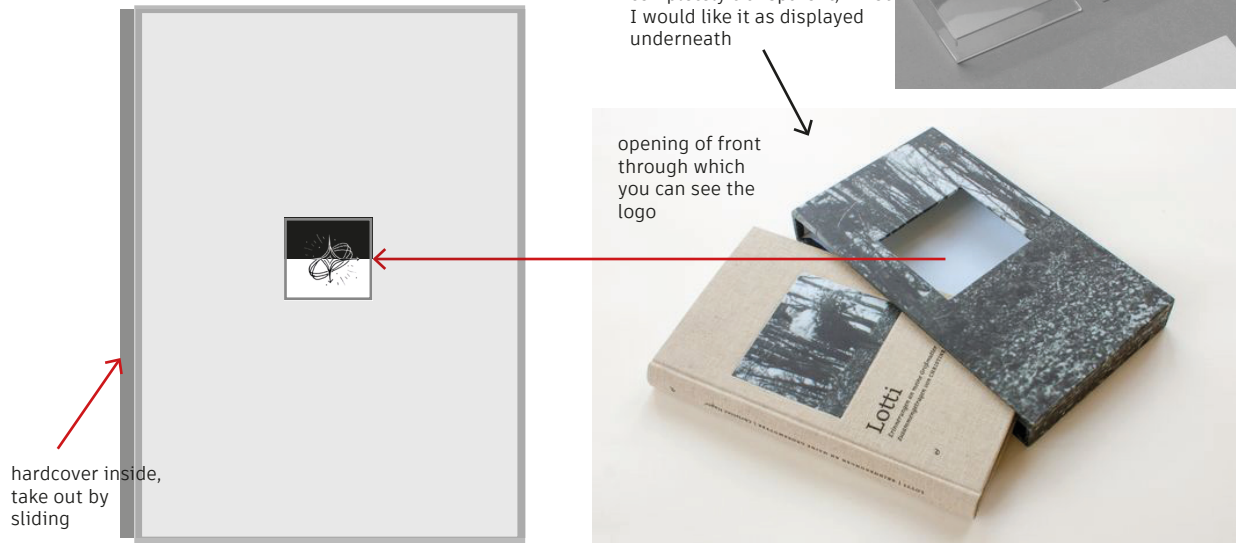
② hardcover that enholds booklet and drawings

flip over to open here

I would like the hardcover to be made of this material (just the box)

= this harcover when closed

(If this is not available at your printshop I can also order this online separately)

③ opened hardcover, fixation of booklet and drawings

elastics or other type of fixation to keep the booklets in place

Printed A3 architectural drawings, folded

RESEARCH

CENTRAL SPARK
DUTCH NEIGHBORHOODS
THE ENLIGHTENMENT OF

DESIGN

=

printed A3 architectural drawings, folded

(= the same hardcover as in step 2 but opened)

④ booklet front

RESEARCH

CENTRAL SPARK
DUTCH NEIGHBORHOODS
THE ENLIGHTENMENT OF

DESIGN

hardcover material like strong cardboard or plastic

BOOKLET STEP BY STEP

⑤ booklet unfolded

one side leporello → 10 x A4, evt. printen in meerdere delen en aan elkaar maken

vouwlijn   vouwlijn   vouwlijn   vouwlijn

RESEARCH

Intro text
The research

DESIGN

BEYOND THE BOUNDARY

Intro text
The leporello

The unfoldable volume

→ snijlijn
→ vouwlijn

frontcover, strong material like strong cardboard or plastic

'stapeltje' van 13x A5, bovenaan bevestigd (dus harde achterkant nodig)

plakken op plaklijn

vouwen

backcover, strong material like strong cardboard or plastic

(frontcover and backcover are materialised a bit stronger like in this example)

at one of the last pages there is two pages from which a 3d volume can be folded. two a5 pages are flipped downwards, of which one is tilted 90 degrees inwards. (see video)

⑥ backside booklet unfolded

other side leporello → 10 x A4, evt. printen in meerdere delen en aan elkaar maken

The design.