

# GROWING ° UP

[now in the urban modernity]

free play along the way.



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-- "If facts are the seeds that later produce knowledge and wisdom, then the emotions and impressions of the senses are the fertile soil in which the seeds must grow. The early years of childhood are the time to prepare the soil."

**Rachel Carson [1907–1964]**

## **Growing up** **[now in the urban modernity]**

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[chaptering of topics]

Author  
Acknowledgements  
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# ABSTRACT

The aim of this thesis is to investigate how public space can support the fundamentals of children's rights and impact a child's development. The proposal seeks a way that allows a play that goes beyond a fenced 'protective' playgrounds which are alienated from the surrounding, other people and usually guarded by parents who set up rules and control the play.

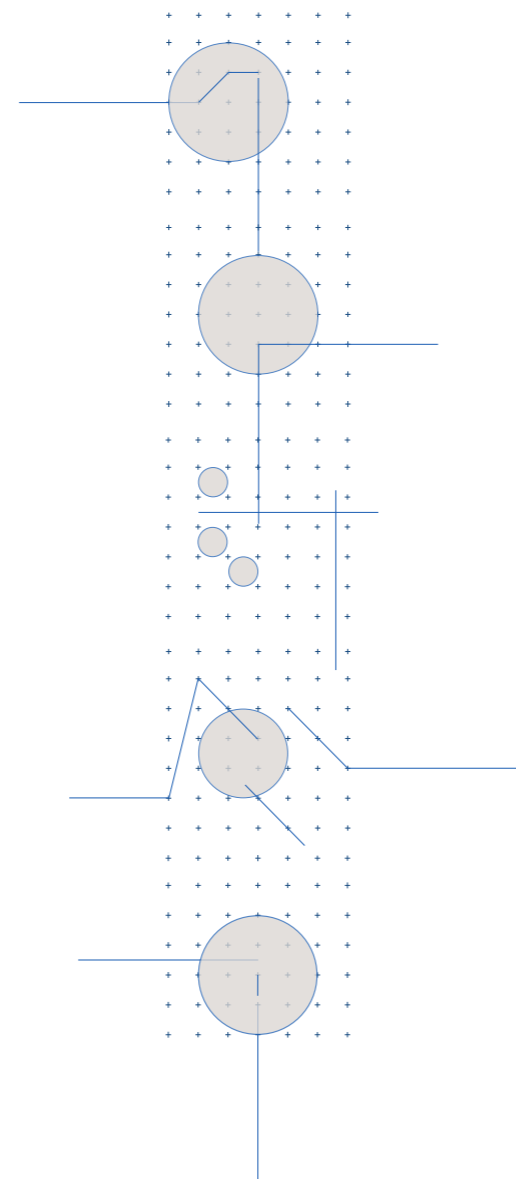
The Czech Republic is a small country in the middle of Europe that is still recovering from the Soviet Union regime, that endured until gaining independency in 1993. This period of socialistic rule left tons of grey panel high-rise housing estates all over the area and the country is still struggling to find the right approach for their development. Nevertheless, people got used to this urban typology and even like living there. This fact makes them an interesting area that allows an opportunity for experiments. Mainly for its particularities such as -outskirt or suburb placement, greenery, not heavy-load traffic and especially a big urge for transformation.

Growing up in this world means being watched all the time. It starts in early childhood, when the first restrictions occur -you cannot touch, don't do this, you can hurt yourself! Such a typical quote is heard almost every day during youth times. Parental fear is natural, but how can a child learn to be an independent and actively developing human being when not allowed to explore by their own way? Missing this natural ability and overprotection, children tend to become more fragile both physically and mentally.

By recreating public spaces -streets, parks, court yards in our cities -making them safer and child friendly, can emerge a potential for shifting parent's mindset, that not everything is a death trap for their infants. Let's give children more independency through not restrained -free play and experience of environment in the city that assure learning outcome and a tighter attachment between them and the natural world.

### key words:

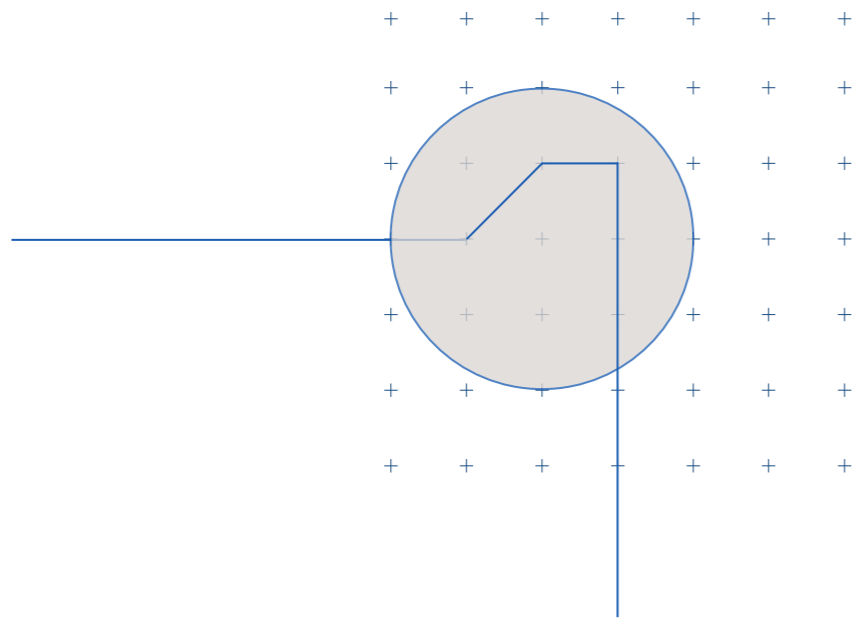
- > children's rights to public space
- > modern urbanism /panel-housing estates/
- > free, risky play
- > biophilic design
- > stronger generation





## INTRODUCTION

The surroundings are constantly influencing, stimulating and shaping us.



# QUALITY PUBLIC SPACE

PLAY[scape] AS LEARNING TOOL FOR EXPERIENCING DANGER for self ~ DEVELOPMENT

TRANSFORMATION & CHANGE

## THE VIVID LANGUAGE of NATURE

UNDERSTANDING THE ENVIRONMENT AROUND US



CHILDREN'S PERCEPTION & VIEW FREE OF MOVEMENT TO ENSURE HEALTHY MATURE LIVING &

## SUSTAINABLE ACTING IMPACT ON THE

# CITY °

"Life demands courage, endurance and strength, but we continue to underestimate the capacity of children taking risks, enjoying the stimulation of danger and finding things out for themselves."

[Lady Allen of Hurtwood]



# BACKGROUND

[theses & me]

## glossary:

**socmodernistic** > technocratic term, which takes a form of inexpensive, undecorated, industrialized building often for housing but sometimes for work environments too, such as offices and factories. Ubiquitous and universal

**risky play** > free outdoor play, to explore the physical world and its emotional relationships, with potential for setback and failure, that can result in injury or other suffering [not a hazardous play!!!]

**free play** > play outside, unrestrained by adults and has major impact on children's health and maturation

**public space** > refers to an area or place that is open and accessible to all peoples, regardless of gender, race, ethnicity, age or socio-economic level.

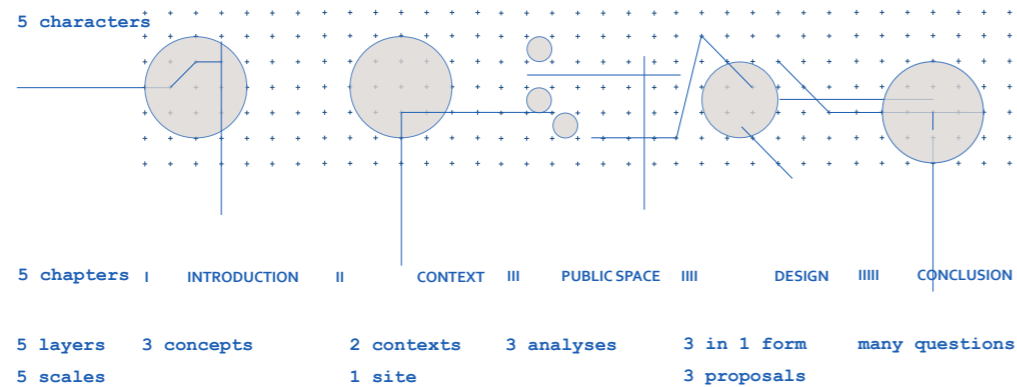
The idea for this master thesis comes from my interest in perceiving public spaces as a playground of a cityscape, where people move and spend their everyday lives. I believe that the space around us can form, shape & help us grow. That is why these 'in-between' building zones deserve a proper recognition. Nevertheless, the cities and public spaces are mainly designed for adults and I started to wonder, what about the others? Why children & elderly are put aside? From a definition of a public space *[-accessible to all]* is possible to identify the problem. The reality does not match the definition and the city is organized for those, who are apparently using it the most -meaning adults, but is that actually a correct presumption? What should be done to create more equal spaces for all age groups including kids, especially in terms of opportunity, accessibility, and safety?

The project is focusing on children, because I think they deserve more attention when planning places in the city, not just a caged playground to check the box -a space for kids -done! I tried to understand how children use the city and public space in their daily routines. How they learn, discover, and relate themselves with places in the city and explore the surroundings through their own perspective.

Context for a project is always important. In this case the site typology is a crucial article to pursue the studied goals of the thesis concepts and the theories follow the proposal context. I was working at a housing estate during last year in Sweden and it got me curious about the modernistic urbanism in my country -the Czech Republic. Especially, when I realized that an attention to children in housing estates is certainly not a priority. It is even possible to say, that it is entirely neglected, in some cases.

For better understanding of the main idea and purpose of this work, I have created an illustrative drawing of the core /page 8/ that describes the layered-scale system of the project. Even though, the proposal itself is focusing mostly on the local scale, it tries to look at the problems in a holistic way and consider all the concerned parts of the system.

How to read the booklet:



° Illustration of the project core

## The CORE diagram

5 layered diagram represents 5 scales of the project > showed as one coherent united system, where all fragments influence each other back & forth [up & down]

1. GLOBAL scale > world codex for protecting children's rights
2. COUNTRY scale > state's own structure for children rights protection
3. CITY scale > natural environment and its influence on cityscape form
4. NEIGHBOURHOOD scale > typology; the structure of certain part of a city
5. LOCAL scale > locus focus; detailed problematics of local character

## QUESTION & PHILOSOPHY

[the project core; introduction of the theory behind the topic]

"If you want to do something nice for a child, give them an environment where they can touch things as much as they want."

Buckminster Fuller



figure |01 J. Jensen  
Playing children in  
Hammarkulen 1970s

How is it growing up in modern urbanism and how can quality public space support the fundamentals of children's rights in the city and even impact their physical & mental development?

**IMPORTANCE OF ENVIRONMENT** ◦ As any other living being, people are inseparably connected to the environment around them. It is not a question of survival anymore, but more a matter of well-being. "Everybody has long associations with some part of his city, and his image is soaked in memories and meanings." (Lynch, 1960, pp.1) That is the reason, why it is so important to take care of the space around us and how it is shaped. It deserves attention, because the impact is bigger than we admit. Especially during childhood, when we observe everything more intensively and we form and develop our personality.

**FOCUS ON CHILDREN** ◦ "People possess an unusual and perhaps unique capacity for lifelong learning, but as for any species, childhood is the most critical period of maturation and development. During childhood contact with nature and importance of engaging in 'free play' outside, unrestrained by adults has major impact on children's health and maturation." (Kellert, 2012)

**DANGER IN PLAY** ◦ Growing up means learning how to be a self-sufficient human being. The development takes time and requires certain number of failing attempts, before reaching success. "In risk-free situations, children cannot demonstrate competence because they can do only what they already know they can achieve." (Solomon, 2014)

## THEORY OF ENVIRONMENT

[importance of environment]

The first chapter of the theory research section is focusing on the influence of environment on human beings. How it can affect people's psychological and physical state and what role is playing in our development. Since the research question targets children, the theory is aiming to address the investigation on childhood.

Kellert (2012) states, people are creatures of mind. Without any doubt this unique ability for analytical and reasoned action -called consciousness thinking, put our species on the top of the evolutionary ladder. As dominant creatures -modern humans, we mastered and controlled all our habitats, nevertheless in a too excessive way, that has been slowly leading us into a global environmental crisis. We are losing our connections to nature and living more artificial lives in our urban habitats - in cities, plug into the network, that is extremely influencing our health status.

Growing up in an urban environment is associated with a decreased contact to green space and leads to the development of psychiatric disorders and increased anxiety, as described by Engemann et al. (2019). That is why it is an urgent necessity to find ways to reconnect children with their surroundings and nature. Mainly because it is relevant to claim that nature catalyses people's intellectual development, feeling of independence and greater appreciation for it. Especially in childhood our senses are more open for absorbing all the new stimuli and experiencing play in outdoor nature can ensure a potential for higher cognitive development. (Kellert, 2012)

Furthermore, when we grow up, we build strong emotional attachments towards a place near our home and the nature around. This emotional affection to nature can significantly alter people's physical and mental health and well-being. (Kellert, 2012) This special connection can increase care and sense of responsibility towards the natural environment around, which could positively influence the perspectives of the place also for the future.

Unfortunately, due to our modern lifestyle, children tend to spend more time inside and our society does not take many actions towards improvement. That is why it is so important to bring more attention to the green public spaces, because if we increase the level of attractiveness of it for children, it is possible to enrich their childhood with new experiences and generate a closer connection with nature.

Urban modernity, a term associated with prefabricated housing estates built in 1960s & 1970s, has a whole idea behind it, which is described more detailed in another chapter. Yet, it is important to mention an association of this modern urbanism and its environment. One of the main reasons, why such high buildings were designed, is that architects did not want to take off much from the natural environment and preserve vast green space around the estates and between houses itself. These natural "in between" spaces should serve to inhabitants as places to spend free time and be in nature even in the urban environment. The potential of this closeness with nature is obvious, but still not properly exploited.

There are in our existence spots of time, That with distinct pre-eminence retain A renovating virtue... That penetrates, enables us to mount, When high, more high, and lifts us when fallen.

William Wordsworth

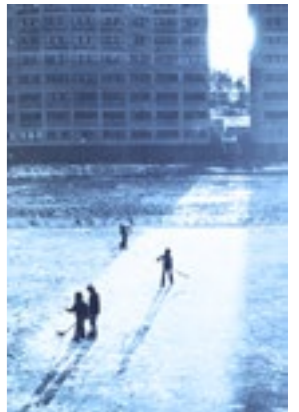


figure |02 J. Jensen  
Playing children in  
Hammarkulen, 1970s

## CHILDREN'S RIGHT TO PUBLIC SPACE

[public space for children does not mean one fenced-playground!]

"Taking care of children is taking care of the future and the present."

Francesco Tonucci  
[2019-11-15]



figure |03 J. Jensen  
Playing children in  
Hammarkulen 1970s

Children and young people, defined as individuals from birth to age 18, represent a vulnerable segment of the urban population, whose needs are being susceptible overlooked by the prevailing adult agendas and priorities. (Bishop and Corky, 2014, pp. 1)

If we look at the urban public space from the point of view of a child growing up today. There are usually few playgrounds, which are surrounded by fence and filled with artificial play arrangements, generally from plastic material including the ground surface. That is it! The rest of the public space is mainly adult-focused and if children would have this crazy idea to use it anyway, they would be admonished, punished and advised that it is certainly too dangerous for them to continue using and playing there. I am asking: how is this possible?

The UN Convention (1989) is explicitly stating, that children have a right "to engage in play and recreational activities, participate fully and freely in cultural life and shall encourage the provision of appropriate and equal opportunities for cultural, artistic, recreational and leisure activity." As looking deeper into legislation of countries, usually it is hard to find an institution that would keep observing these engagements towards children.

Therefore, I believe that architects, urban planners and others who take care of the urban environment, where children grow up, have to act and defend their rights by designing good spaces for everybody, including children. The trend nowadays is that a child has only certain restricted areas, where it can play. Plus, the increased parental fear diminishes the opportunities for it to spend the time outside as well. Thus, we are taking away a choice from children, we are separating and excluding them from public space and from nature. These evidences cause, that children get unattached from free play outside and get more fragile - physically and mentally. As Kellert (2012) indicates, the environment and spontaneous contact with the outdoors, essentially impact children's development, health and well-being. The result can be found in statement from Richard Louv: "--the way children understand, and experience nature has changed radically. For a new generation, nature is more abstraction than reality. Increasingly, nature is something to watch, to consume, to ignore... Our society is teaching young people to avoid direct experience in nature." (Kellert, 2012, pp. 138-139)

It leads me to a question: Does the possibility exist to change the current situation through an involvement and transformation of our environment? And if so, can more inviting green public space attract children and improve the situation?

## THEORY OF RISKY PLAY

[experiencing danger & risk in play helps children understand reality and limitations]

Risky play, not hazardous play! The definition of taking risk is: "a situation with an unclear outcome; nothing is predetermined; -- making choices may be part of taking risk", risk that accepts the minor injuries, can be a valuable part of every childhood experience. (Solomon, 2014, pp. 32) The topic is to support experiencing new things, definitely not to set up a life-threatening situation, that would be not acceptable at all.

Mike Shooter, former president of the Royal College of Psychiatrists, writes: "Children and adolescents must naturally take risks as they explore the physical world and its emotional relationships. Parents who overprotect children may cause just as much harm as those who neglect them. Sheltered from all experience of risk, such children may be unable to cope when they meet it outside the family home. Others may rebel in dangerous ways against the web their parents weave around them. In other words, an optimum amount of risk is a healthy part of growing up." (Solomon, 2014, pp.32-33)

Basically, it is a necessity to gain experiences of danger during childhood, no matter the parental restrictions. But a question rises up, where children can reach the experience of danger? Today's lifestyle is often oriented for spending time inside, usually attached to a digital device. New generation of children are losing an experience of being exposed to an outside world, that is dynamic, alive and allowing a potential for failure. (Kellert, 2012, pp. 136)

Parents tend to overprotect and underestimate their infants, but children usually can recognize what is too big of a risk to take, and step aside. In a way, it is natural to be afraid, but if adults won't allow their children to understand a potential of a danger, it can cause even more trouble. Because when children grow up, they won't be able to recognize their limits, thus the predispositions for being injured rise. But not just a physical state can be damaged, if children won't learn to fail, they can suffer with big mental problems as well. Especially nowadays, when the society is very achievement-oriented. That brings to mind what Helen Little, at the Institute of Early Childhood of Macquarie University in Sydney, suggests: "The ability to assess potentially risky situations and avoid excessive risks is an important life skill and one which constantly changes during childhood in response for developing abilities and knowledge in different contexts." (Solomon, 2014)

The situation needs to be changed and this thesis is exploring this problem in an urban strategy that is suitable for such experimentation. Life is slightly different in areas like huge outskirt housing estates from the 70s than in the city centre. Less traffic, more greenery and open space support children's independent movements more. Mainly because of the fact, that schools are reachable by foot in minutes and due to this advantage, parents more likely leave their children to go -to and from the school alone. That creates an opportunity for children to be more autonomous and explore their surroundings. The idea is to place an attention on this phenomenon of 'alone walk to school' and create a public space for children, that invites and provokes play without borders, closer to nature along the way.

focus  
definition of **risk**  
~the possibility that  
something bad might  
happen

not focus  
definition of **hazard**  
~something that is dan-  
gerous and likely to cause  
a damage



figure |04 J. Bridgeman  
Playing child. 1960

# PURPOSE & DELIMITATION

[what is the project about]

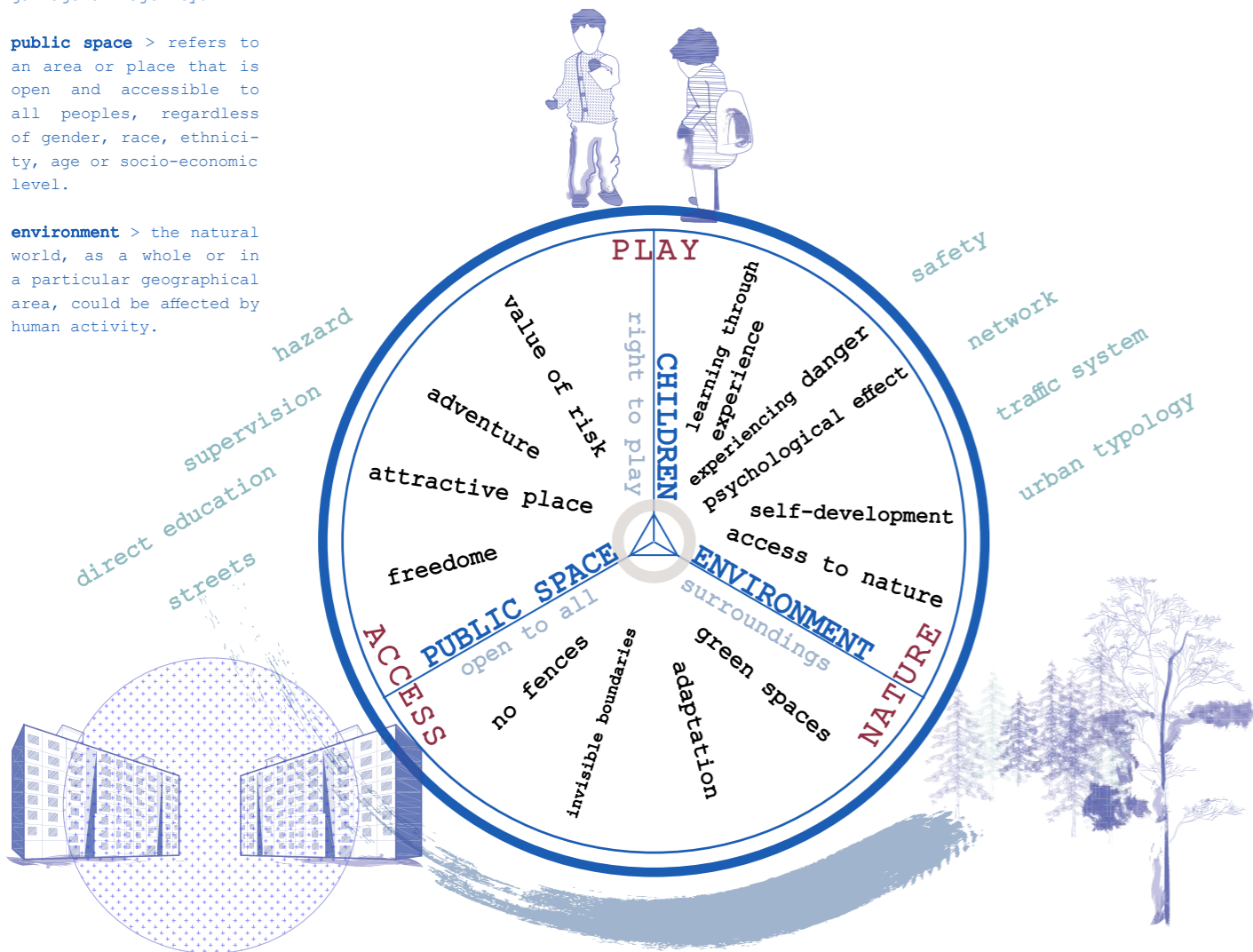
## topics definitions:

**children** > a young human being, below the age of puberty or below the legal age of majority.

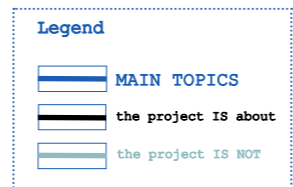
**public space** > refers to an area or place that is open and accessible to all peoples, regardless of gender, race, ethnicity, age or socio-economic level.

**environment** > the natural world, as a whole or in a particular geographical area, could be affected by human activity.

The purpose of this thesis is to propose solutions that will allow children to reconnect with their environment through free outside play, assure an opportunity for involvement in the public space and enable self-development through experience of unknown associated with a potential of a risk-filled action.



° Diagram of delimitation



# RELEVANCE

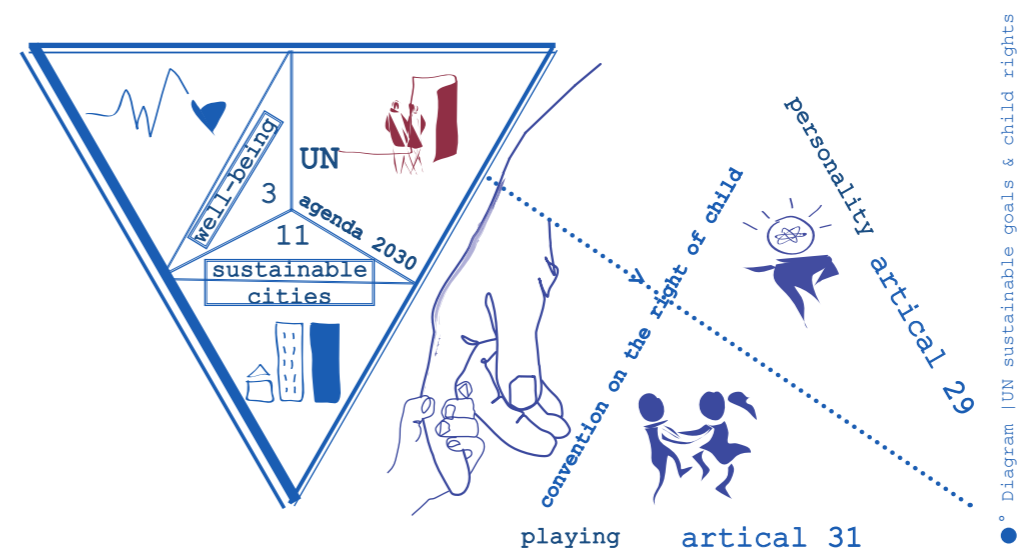
[how are children rights implemented in the current law & policies]

**What is the Convention on the Rights of the Child?** It is the world's most widely ratified treaty of human rights in history, that is ensuring children's rights. Almost all countries around the world have accepted this convention, but how much is taken care of complying its content in reality nowadays? The project is targeting two different countries, to be able to see the similarities and differences in their approach. Could the diverse development of those countries impact the abundance of the convention and if so, what are the consequences?

The project is focusing on two articles that are the most relevant for the topic. The first one, article 31 is stating the right of child for play and encourage appropriate and equal opportunities for it. Children have a fundamental right for play and it should not be fulfilled just through some fenced playgrounds. Why the play in the cities has been restricted to a few strictly defined play-squares surrounded by a cage and how it affects the children's psychological and physical development? The thesis scope is trying to resolve this issue.

The other one is article 29, that assures the children's development of personality, preparation for responsible life in the spirit of understanding and respect for the natural environment. The case study discusses: if the surroundings evolve into more attractive and child friendly spaces, can it lead to a children's better personal development?

Furthermore, the topic of the thesis is focusing on two UN sustainability goals. Number 3, ensuring well-being for all ages, targeting part 3.4 which promotes mental health. And number 11, development of city parts and safe movement around area, in particular section 11.7 that assures providing access to green and public spaces, especially for children.



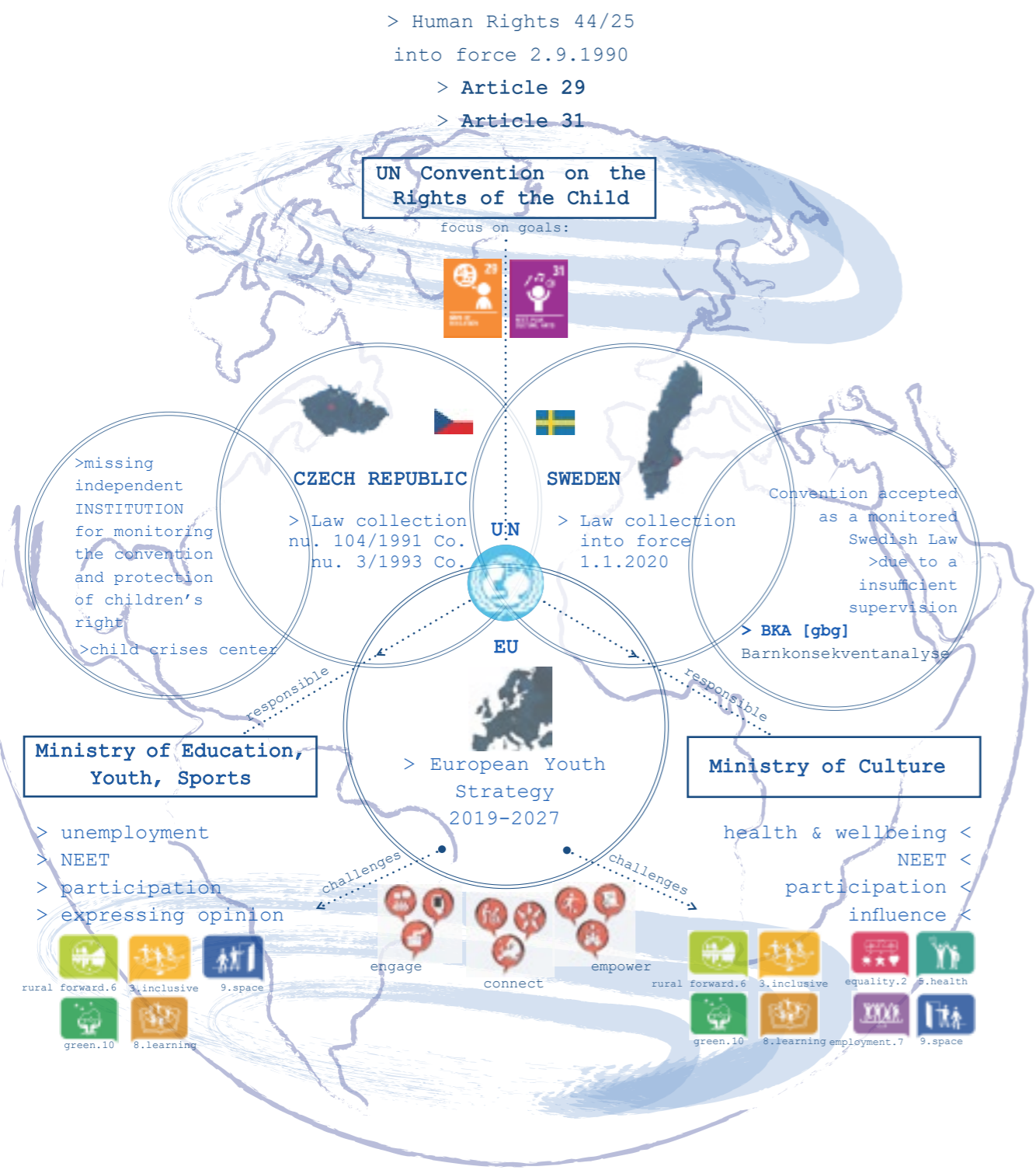
° Diagram | UN sustainable goals & child rights

**United Nations,** Human Rights Convention on the Rights of the Child, Adopted and opened for signature, ratification and accession by General Assembly resolution 44/25 of 20/11/1989 entry into force 2/9/1990, in accordance with article 49 [12]

**Article 31**  
**Article 29**

**Habitat III,** Quito 2016 human rights discussion > children's right for PLAY

**UN,** Agenda 2030 for Sustainable Development, Goals\_ nu. 3, 11



° Diagram of different policies connected to children's rights in Europe [Czechia & Sweden]

- > for recognition of the holistic system
- > differences & similarities between Sweden & Czechia for understanding the context

# METHODOLOGY

[research for design]

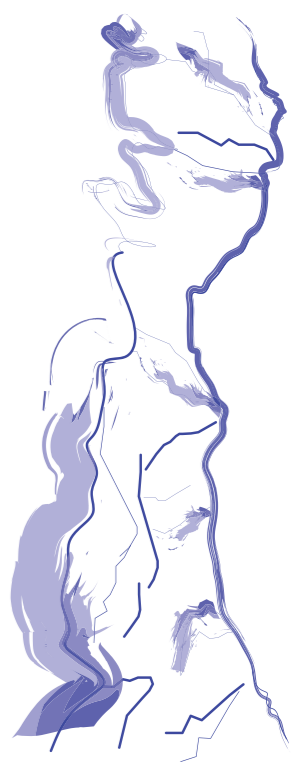
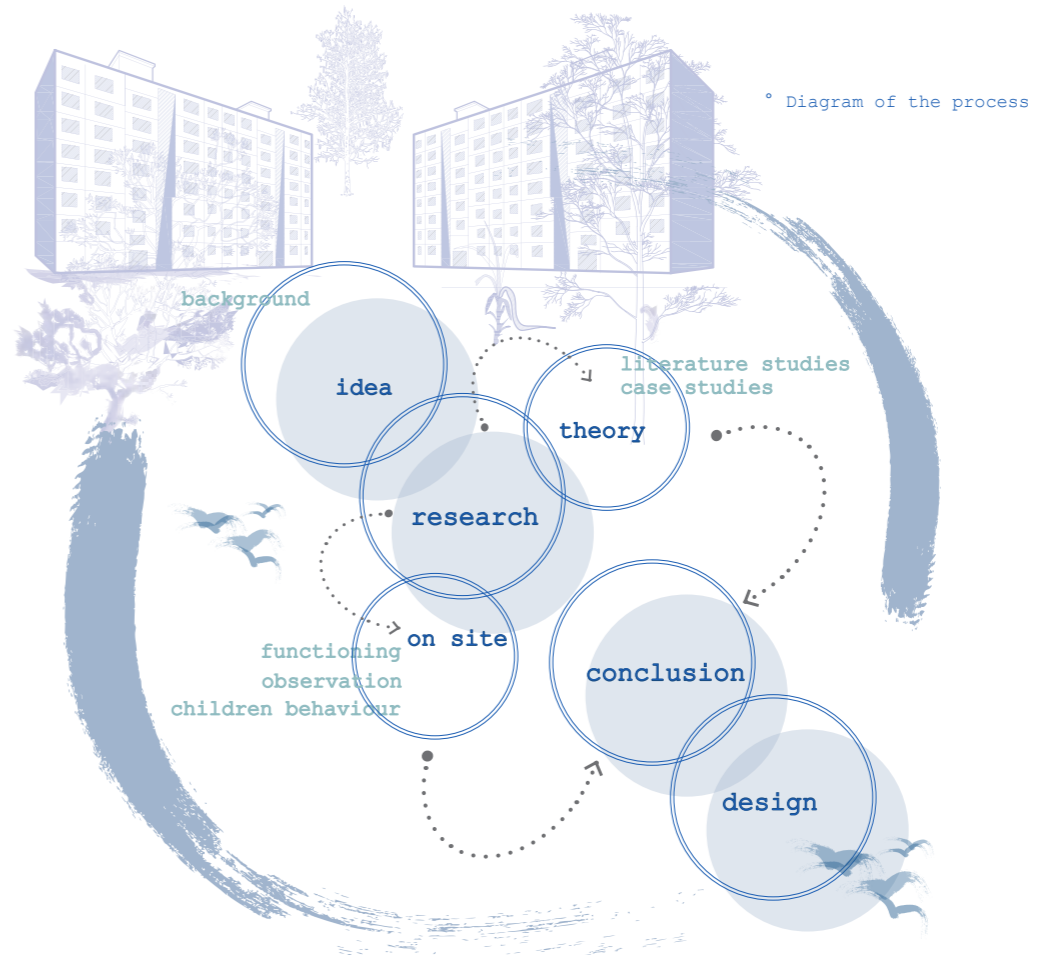
The project is dealing with an issue of how a city environment imprints on children and their personal growth. It investigates the possibilities of different approaches for public space that could help children feel more free and offer them new places for play around their habitat.

**Literature and case studies.** The topic of children's play is very well mapped. Since 1947 architects, urban planners, artist, psychologist, environmentalists, and others, started to focus on children and their place in the city; the way they play, where and how. There are tons of materials, so it allows me to dig deep into the subject, and draw conclusions and attributes for application in the design proposal.

**Site observations.** Understanding the environment and functioning of the site is very crucial for the project, so numerous site observations have been done. The site is in the town where I grew up, which helped me with understanding the context, the site behaviour, and the convenience of this particular site for the case study.

Thoughts are like vessels, like trees, as they grow, they spread and breath.  
- branches get thinner, but multiply... same as thoughts dig deeper, narrower they become. If you stand too close, you cannot see, but step aside and you will be.

[the author; N.Ž.]





## C O N T E X T

modern urbanism theory >  
alias housing estates as  
machines for living, but  
how is the life there now,  
still the same or has it  
changed over time?

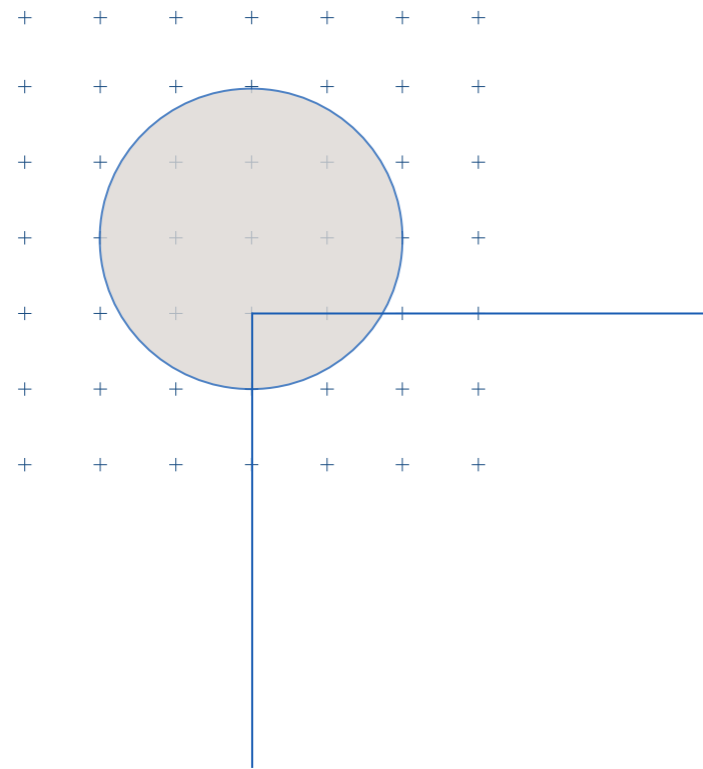


figure |05 Photo of child in Hammarkullen, by Jens Jensen 1974.

# URBAN AREAS

[two different contexts, one same typology]

## The Czech Republic

area: 78 865 km<sup>2</sup>  
 inhabitants: 10,65 mil.  
 capital: Prague

## Sweden

area: 450 295 km<sup>2</sup>  
 inhabitants: 10,12 mil.  
 capital: Stockholm

**Why two different contexts?** When I moved to Sweden, I have been able to recognize several similarities with the Czech Republic. The natural environment appears almost the same and one more similarity caught my attention. It was the prefabricated panel housing estates which were built in 1970s. I grew up in an estate likewise and I was able to recognize myself through this explicit typology very easily. It has started to interest me, and I wanted to know more.

I have found many identical aspects between the Czech and the Swedish housing estates, but also many differences between them. One of the main disparities is the idea behind building this type of housing. Surprisingly, it influences a lot the further development of those places.

The Swedish Million Home Programme is very criticized and even hated by some architects nowadays. Maybe even shameful for someone, but inhabitants of those estates definitely do not agree and feel very happy there, even though they sometimes struggle with the old structure of apartment and building itself. Nevertheless, in 2010 Hammarkullen [as one of the estates of the programme] has become one of the pilot projects of Mistra Urban Futures, known as a Swedish centre for sustainable urban development. (Caldenby, 2010) And since then, the environment and conditions have risen. Thus Hammarkullen, as a modernistic urban structure, has been developing and adapting itself to the new era and new lifestyle. With its specific placement which brings some advantages as well as disadvantages, this estate is filled with life and a lot is happening around. Especially for children, it is an oasis for free movement, great nature discoveries and it is full of potential for adventure. On contrary Jablonec's housing estate Šumava is untouched since 1970s and still waiting for its restoration and development, which is planned for next few years by the city of Jablonec nad Nisou. The thesis will focus on Jablonec's Šumava estate, but use the Swedish example for better understanding of the context.

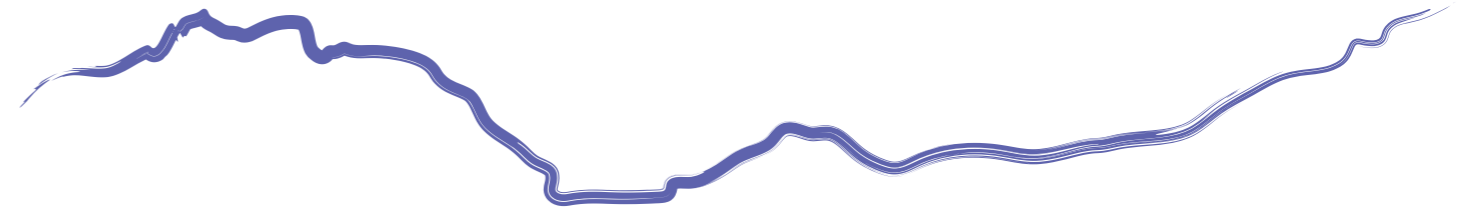
figure |08  
 Jablonec [above]  
 & Hammarkullen [below]



figure |06 Sidiště Šumava figure |07 Hammarkullen 1972



° Map of Europe



**Czech Panel Housing Estate** The Šumava housing estate is located in north-eastern outskirts part of a city called Jablonec nad Nisou. It is one of the oldest prefabricated panel housing estate, that was built there in early 1970s. In this period the whole country went through a major aesthetical change. Parts of the city had been torn down and replaced with new building entities -high rise concrete prefabricated panel constructions.

Jablonec as any other city in Sudety [northern border districts of Czechia] had been part of this "social housing restoration" and the atmosphere has changed forever. Several parts, that used to be filled with beautiful old villas, had been demolished and instead, new modernistic prefabricated panel high-rise housing buildings had been built. The transformation was quite brutal and the city got a universal "socmodernistic" character. This style evokes an inexpensive, undecorated, grey appearance, that looks more like a machine constructed for living, which was the whole idea of a modern urbanism, only translated by social regimes into their own agendas. (Crowley, 2013)



**Swedish Million Home Programme** Hammarkullen as one of the six estates of Angered, is situated in the north-west outskirts of the city of Göteborg, that is the second largest city of Sweden. This housing estate was built during the "record years" in 1960s when the city started to expand rapidly, and a housing capacity was lacking. This area was supposed to grow over time and eventually to become a valuable part of the city. Unfortunately, in the 1970s Göteborg was hit with a huge economic crisis, that caused the city population to drop and concluded with the depopulation of the Million Programme areas. This fact stopped the programme and it has never been finished as originally planned. Nevertheless, Hammarkullen is culturally the most attractive of the estates and became home for many refugees and immigrants. (Caldenby, 2010, pp.146-148)



# HISTORY

[the life around prefabricated panel houses, then and now]

Panel Housing in numbers:

## Czech Republic

building period:  
1958 - 1990  
1,200,000 new dwellings  
in 1970 > more than  
70,000 apartments were  
built

## Sweden

building period:  
Miljonprogrammet  
1965 - 1975  
1,006,000 new dwellings

**General information -history** Urban Modernity is a modernistic concept which idea lies in a post-war urbanism when cities were constructed to be primarily functional. The era of planning cities as machines has started with The Athens Charter of CIAM in 1933, and became the central concept of the post-war planning. Since then, especially in the 1950s and 1960s, the urban modernity was prospering and the prefabricated panel housing estates became a big boom in the whole Europe. The characteristics that represent this urban planning contains four main key functions, that had been formulated as: dwelling, work, recreation, transportation. The plan should follow the daily routines around these four keys with dwelling as the centre of all planning. The traditional city is chaotic, mixed and did not fit to the new “machine age”, when everything was supposed to have just one place. A perfect urban organization should have solved the problems of those times of chaos and destruction. (Caldenby, 2010, pp. 5-7)

“In the Soviet Union [former Czechoslovakia was included in SU; today the Czech Republic] the modern urbanity was a success in much the same sense: it dominated the built environment completely. This monoculture also was a cause of protests which were more difficult to stage than in the West but nevertheless possible.” (Caldenby, 2010) Czechoslovakia after the Second World War belonged to the Soviet Union and with the new order, a project of ‘building socialism’ started, which historian Michael Billig calls “Banal nationalism” as a kind of low-key nationalism, that is a constant flagging [the idea of doing civic duty] but constant forgetting or overlooking of the nation. The idea was ‘build now to make better world for tomorrow’ and by the 1970s, tomorrow had to be available now, and a single-family apartment became a new housing block. (Crowley, 2013)

**General information -today** As Crowley (2013) asks: “--today, most architects talk about prefab panel construction housing in terms of technical problems, asking how do we improve the efficiency of these buildings? Or in terms of social problems - how can we make them more secure?” All of these questions are more than relevant. Though, these housing estates, due to their placement with vast greenery all around, make them potential places for new projects and experiments. Trying to take the best from them and use it into our prosper.

“In Kozakiewicz’s future – the return of concrete to nature is somehow productive. In this way, he tries to kind of claim a different sort of future, one that is different to the doomsdays scenarios that appear in our culture.” (Crowley, 2013)

The strict organization of the urban modernistic planning and view on the city as machine made housing estates more or less self-sufficient units, that each of them creates a neighbourhood, where almost everybody knows each other. This fact offers favourable circumstances for the project case study. Mainly, because it forms an opportunity for children to be more independent, because their parents do not have to worry that much; e.g. go alone to school. A question comes up, can we approach children through a public space in these areas by creating new possibilities for an outdoor free play along the way to school?



figure |09 Šumava housing estate in early 70s.



figure |10 Shopping zone in Hammarkullen in early 1970s.



figure |13 View on the city centre, city of Jablonec



figure |12 View on the Šumava estate from the square



figure |11 View on the city's beautiful reservoir

• Jablonec nad Nisou

## SITE ANALYSES

[deeper understandig of the site & mapping]

**Jablonec nad Nisou** The site for the project is located in the housing estate called Šumava which is blending into the city itself. Jablonec nad Nisou is situated in the north of the Czech Republic, nearby the border with Germany and Poland. Mountains called 'Jizera mountains' are a natural bordered between the countries. This phenomenon gives the city a certain image. It has a big topographical difference [between 380 - 758 metres above the sea level], so one can feel like they are always going up to the hill or down. Also, the connection between the city and the natural environment is very tight.

Jablonec has approximately 45 000 inhabitants, who are mostly living either in the family house, villa or in the housing block of the dwelling estates. There are six panel housing estates districts and Šumava is one of them.

**Šumava estate** This housing estate is located on the opposite hill from the city centre, that makes the site special for its beautiful view of the city, as well as on the forest of the mountains. Its location is really perfect for living, it is close to the city center. By foot it is just a valley and a hill across and takes approximately 30 minutes, otherwise regular bus line connections are assured. Another advantage is a water dam, that is in a walking distance, takes only ten minutes by foot, and this icon is offering a lot of great recreational activities.

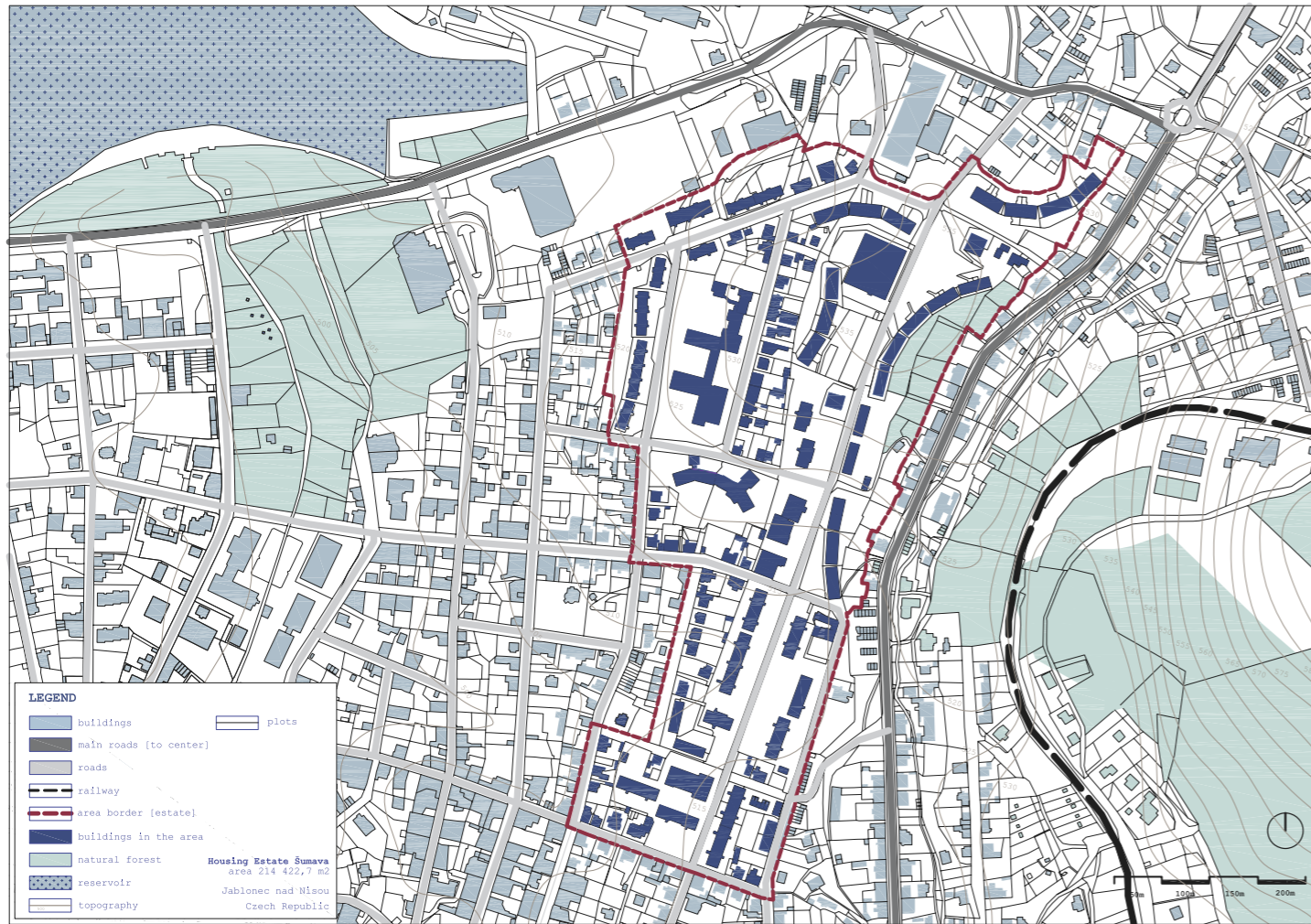
Although, Šumava is merging with the city, it is functioning almost as an isolated district. It is due to the high-rise buildings and wider spaces in between, as typical housing estate. It is basically a sufficient unit, with primary, secondary and pre-school, small shopping center and few other bussinesses. That allows people to leave this place only for their jobs, recreational time or bigger shopping situation -as it was planned. No need to leave this place. That makes it very convenient for young families, the apartments are cheap and all school facilities are nearby. Perfect for a rising a child.

### Jablonec in a shortcut:

50°43'40", 15°10'12"  
country > Czechia

country district > Liberecko  
official city name > Jablonec nad Nisou

inhabitants > 45 802 (2019)  
area > 31,39 km²  
level > 475 m  
houses > 5 403 (2011)  
river > Nisa

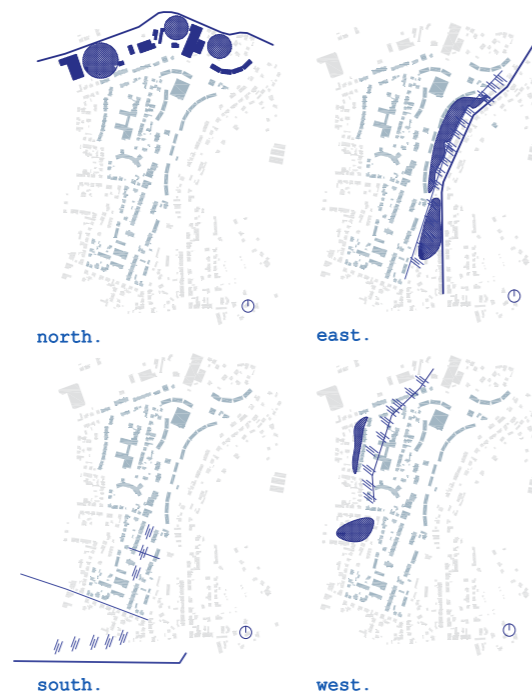


• The site context; borders



• Sketches of the Šumava estate.

**Context** The housing estate of Šumava has classic modernistic typology, but what is unique is the aspect, how this urban structure is blurring into the existing cityscape. So, on the map it is not clearly recognizable where the actual estate boundaries are, but could be truly seen in -on site experience. The feeling of reaching a 'new' area is physically there, even though it is not visible.



• The site borders

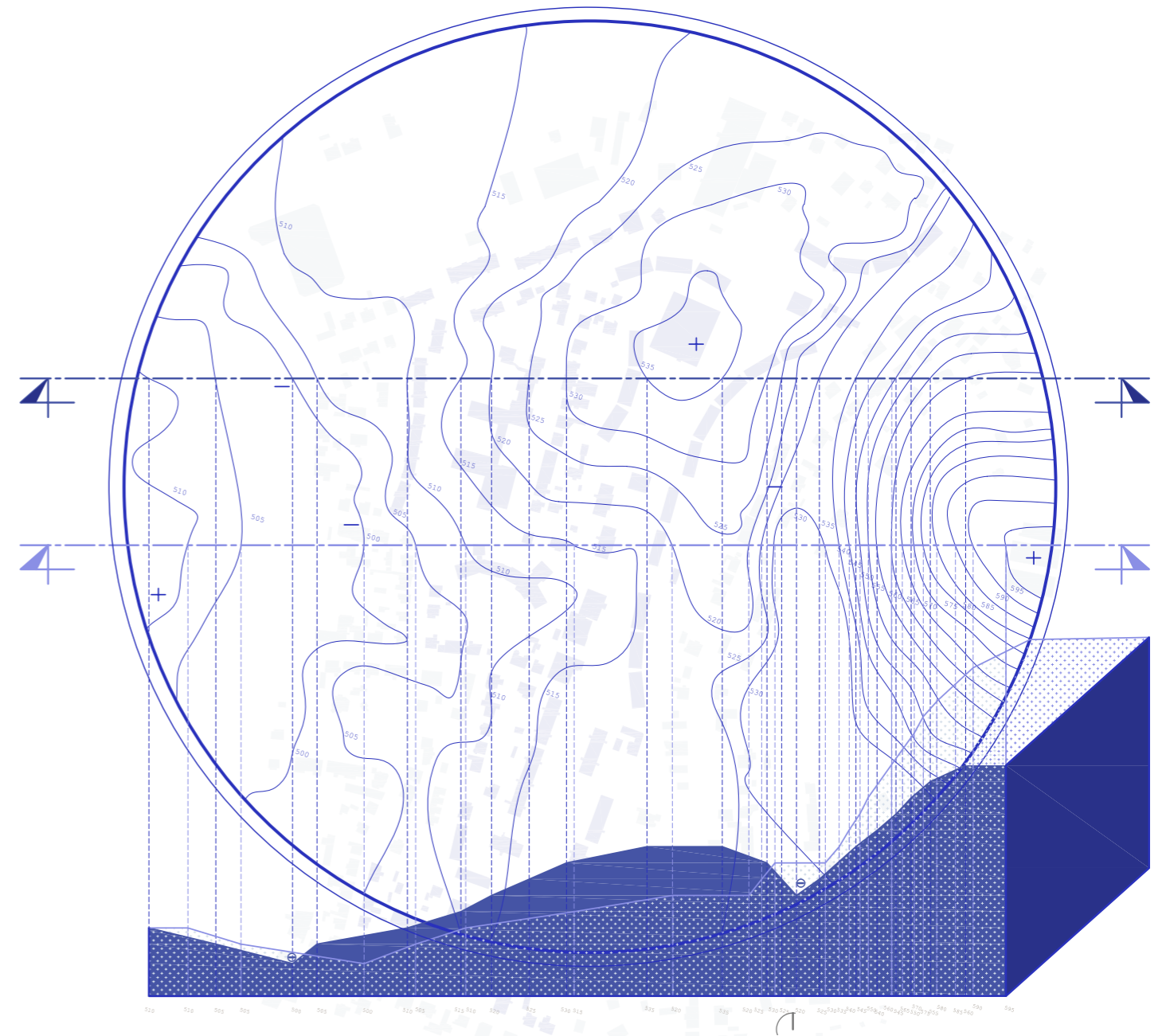
> each side of the area has its attributes which are articulating the 'invisible' boundaries of the estate-site area  
> important for understanding

- greenery; open space
- ▨ buildings
- road
- ↗ sloping terrain

**Landscape** The area has a variable height profile. It is located in the mountains and due to that fact the city has vivid topography. The estate is situated on one of the hills and offers astonishing views to the city, and on the green-forest hills of the beautiful Jizera mountains on the other side.

• The site slopes

> each side of the area has slightly different articulation of a slope topography



• Topography of surroundings nearby the Šumava estate

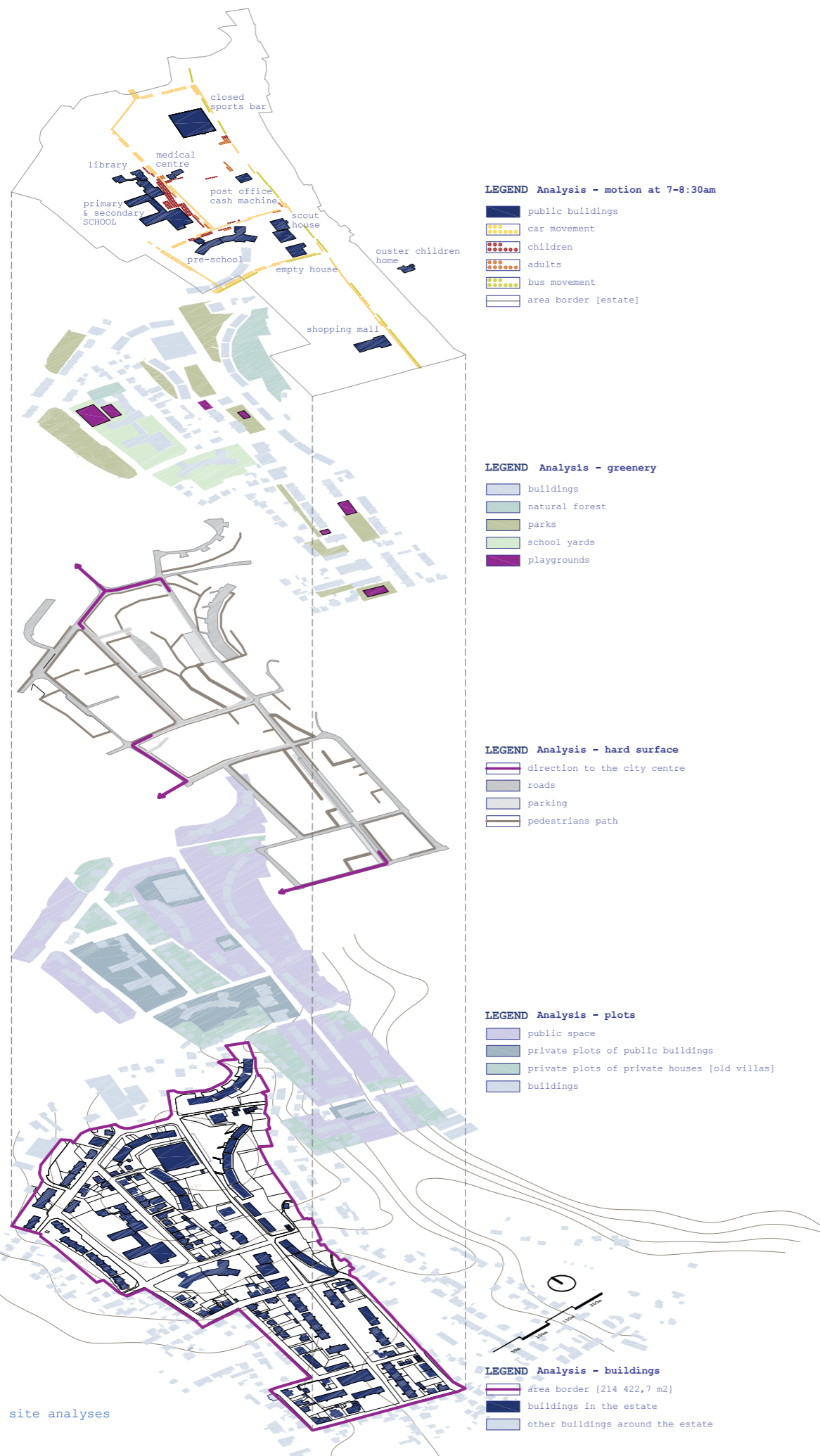


Diagram of different site analyses

**Flow of people** This analysis is capturing a motion of people nearby the public buildings and on roads during a weekday morning. It is showcasing this specific period of time on purpose, to witness the circumstances of a child's morning walk to school, which is a daily habit that I want to use for the design proposal.

**Greenery** Natural public spaces are very important for people to feel comfortable in the area where they live. The identification is done according to wildness of greenery, meaning park -cultivated greenery, forest -wild greenery. This fact is important to know, how much are certain spaces cultivated and grown to pursue the planned interventions.

**Roads & paths** This analysis is important for understanding the flow of people, cars, bikes in the area. The situation is a right angled network with one spinal road from which is possible to get to any other direction. This axis is intersecting the whole estate and is necessary for the car transportation.

**Public space** The area is divided into four categories. The first one is public space which includes green parks, forests, squares, parking plots as well. The second represents private plots, but with public buildings, such as schools, shops, administrative buildings. The third category is private plots with private buildings, this is not very important for the project, but it is good to recognize for the context. The last one includes the buildings itself, which define the public space.

**Boundaries** The area does not have clear boundaries. However, it has its 'invisible' borderlines, which are clearly recognized on site. On the eastern part it is a steep slope which is leaning toward a big road in the valley. In the north part, it is a big road which leads towards the city centre and to the mountains on the other way. In the south, there is a sloping side towards another big road. The western part has the most blurred edge but could be recognized by a green line corridor that traverse the back side of a high-rise panel buildings. For better idea of it, see /page 26/ the site borders diagrams.



Šumava 1970.< > Šumava 1940.

figure 14 Photo archive of Šumava estate

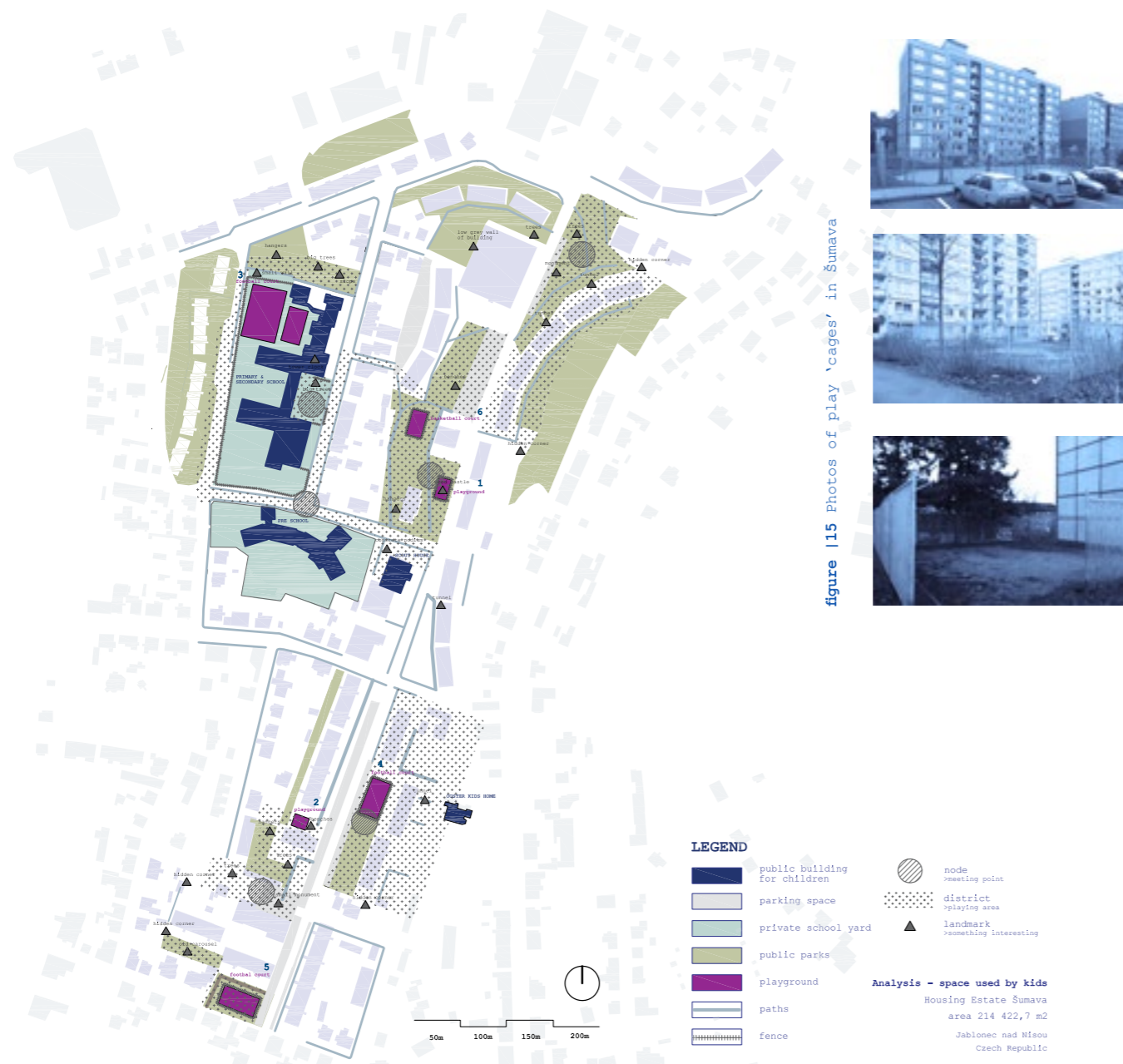


figure |15 Photos of play 'cages' in Šumava

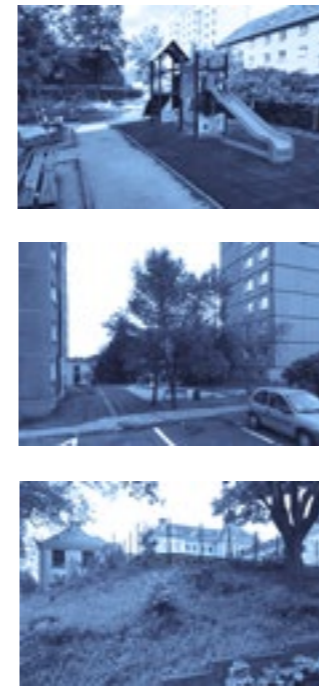


figure |16 Photos of play in greenery in Šumava



Map| analysis of greenery & walking paths

Map| analysis of spaces used by children

**Analysis of space used by children** The Šumava housing estate is filled with potential for a free outdoor play. The map above shows sites, that are pointed from a child perspective. Mostly, where playgrounds are situated and what kind it is. As well as, the other “landmarks” from the view of a kid, such as a clothes hangers [great for climbing], small art monument [amazing for hiding and building small houses] or big trees, hidden corners, tunnel or steep sloping terrain. The “districts” marks where children move around and they are usually nearby the play landmarks, schools, parks and playgrounds. The last sign is “node” that symbolized a specific crossing between all listed above with concentration of children in their free time.

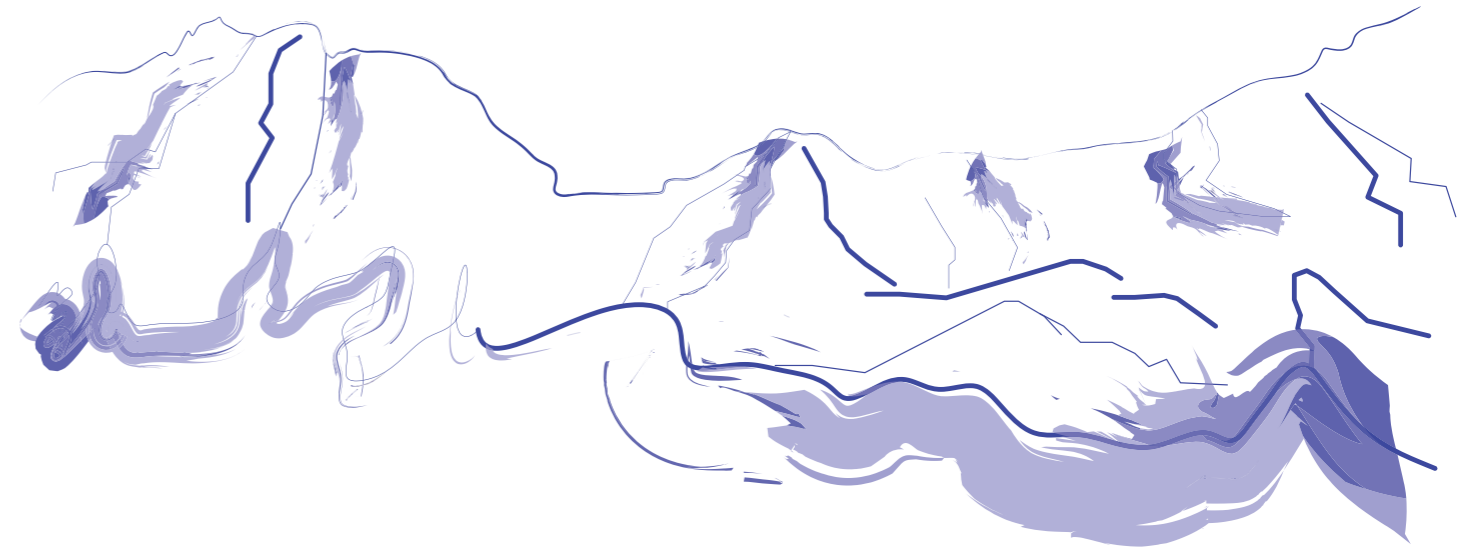
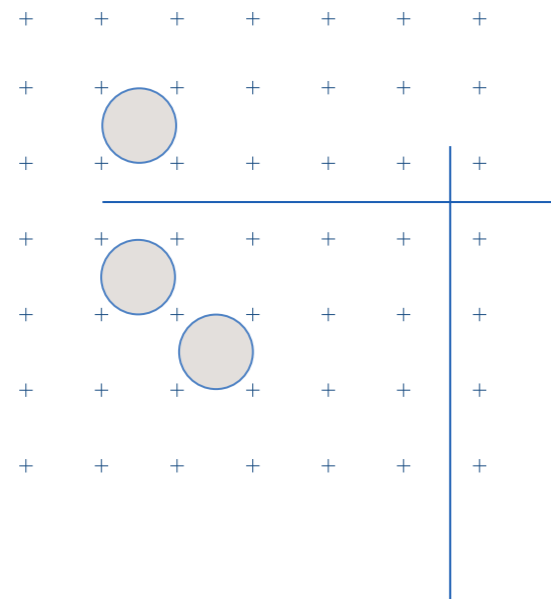
**Playgrounds on site** Šumava has basically six sites considered as playgrounds that are intended for children. There are two of them designed as “classic” artificial playhouses with tiny slide and small swing, both of them with special surface under the structure. Then there are three other playgrounds, that could be classified such as an open space area for playing football or basketball. All of them have scrappy, not taken care of surfaces. The playgrounds are situated along the main estate road and due to that, they are fenced to protect the kids from cars, but missing a spirit of an interesting play. On the other side of the buildings there is a backside path in the bush, quite hidden, but offers an alternative for more adventurous way of play.

**Analysis of greenery** As an example of a housing estate typology, it is possible to find a lot of greenery there. For its uniqueness of integrating into the cityscape structure, the greenery could be identified more as a small ‘pocket’ parks with a nice, grown trees of different kinds. The map, above this text, shows approximate number of represented trees and their types.

**Species** The species of trees is varied. It is usually a mixture of needle and leafy trees. Mostly identified as maple, birch, lime tree, pine and spruce. This variety supports the diverse presence of animals. It is possible to meet different kinds of birds, a squirrel and on the grass fields some insects. For adults such meetings are not important, neither noticeable, but for a child -it is something amazing, new to look at and to study.

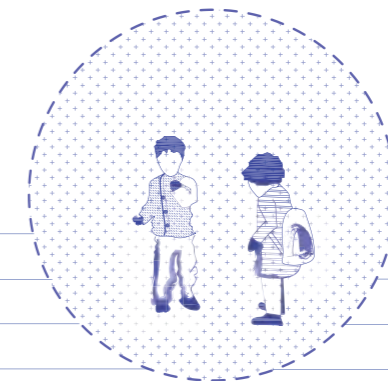
# SPACE

what type of spaces could be found in a specific typology of housing estates and how is it interrelated with different strategies?



"Over thousands of generations the mind evolved within a ripening culture, creating itself out of symbols and tools, and genetic advantage accrued from planned modifications of the environment. The unique operations of the brain are the result of natural selection operating through the filter of culture. They have suspended us between the two antipodal ideas of nature and machine, forest and city, the natural and artifactual, relentlessly seeking, in the words of the geographer Yi-Fu Tuan, an equilibrium not of this world."

[Edward O. Wilson, 1984]



# TPOLOGY & STRATEGY

[what type of public space children use and how]

"Architecture is the will of an epoch translated into space."

Ludwig Mies van der Rohe

**Typology** The site is located, as mentioned in the previous chapter, in the outskirts of a city and has a specific urban typology. The housing estate was built during 1970s when in the Czech Republic was popular a socmodernistic building style. More detailed description could be found on previous pages, but for now, it is important to mention it briefly as well, to be able to clearly see the consequences and outcome of that typology. Socmodernism was an ideo-political building form, which had a goal of targeting a working class. It was made to be understandable and very suitable for their lifestyle. That should assure the leading political party to stay in force and popular, because in that time working class was a majority. The socmodernistic typology contains the modernistic concept of urban planning, but in a very cheap productional way. Due to that, the estate's buildings are very raw, grey and build out of prefabricated panel items and include certain characteristics and attributes, that influence the surroundings. The most relevant fact for the project is that the buildings are constructed into blocks and each block creates a small island embedded in the estate. But the rest of the space is free and offers an opportunity to use this land for other purposes like green parks, sitting areas, play areas, etc.

**The play** As a child who grew up in the housing estate like this, I can say, that it was a wonderful environment for childhood. Mainly, because this type of housing was occupied by young families, so we were many kids in almost the same age, growing up together. Practically each estate had a crew of kids who had been playing, discovering, and hanging together and who became close friends. When I am recalling those times, I cannot stop smiling, it was such happy times. We were always coming up with new ideas how to use our surroundings for new play-games and it was really exciting. We did not have many playgrounds around, it was only one sandpit and later -one carousel, so we had to use the imagination to make the play more interesting. However, that has changed over the time. Nowadays, we live in a digital era which is influencing today's children even more, because they have been born into it and do not know the times without an internet or phone, when the game did not mean running and fighting through avatars, using buttons on the keyboard, but running outside with other kids.

**Strategy** Even though the times have changed, the environment of housing estates in Czechia haven't, even a bit. They work the same way, especially if we look at it through the eyes of safety. It is still one neighbourhood, where almost everyone knows each other, the traffic is not that heavy, and the open green space is still there too. All this supports children's independence better than in the city centre. The fact that parents are less afraid to let their children to go alone to school creates an amazing opportunity to use this time for taking their attention and creating an opportunity for them to spend more time outside with other kids playing. As it was in the past, when the play was not only digital and organized.



Map| analysis of child movement to school



Section-view of school and school entrance

**Daily habits** of children are usually done within a smaller perimeter than by adults. It is possible to say, that most of the children stay in the estate neighbourhood during their whole day. It is because everything they 'need' is right there. As mentioned before, children are watched, almost all the time during their daily routines and the only spare moments, when children are 'unwatched' and free is during their way to school. Of course, not all of the children come alone, but through the observations, most of them do. This creates an opportunity for them to enjoy couple of minutes of free play along the way to school. Since they have some time 'to waste', while waiting till the school gate opens.

**Children movement - analysis** The layout diagram /page 36/ is based on a site observation during the "rush hour" - before the school starts. The map is describing a hypothetical situation that is formed on a prediction, that at each of the panel high-rise building live certain number of children, who are attending the school on the estate. Those buildings are symbolized by the size of a dot, which shows the approximate size of a floor plan in square meters. From those dots lead lines which follow the fastest and the most potential route [from 'home' to school]. The longest way is around 500m that means, the opportunity to leave children to take the way by themselves is quite obvious and safe, since there would be of other children and adults heading in the same direction.

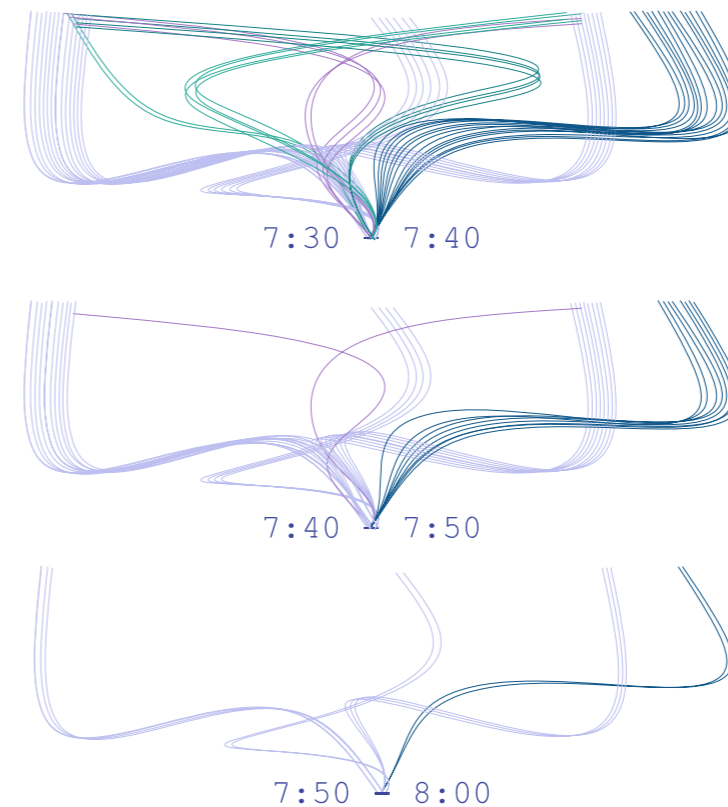
**Results** Through observation at the entrance to the school, I have noticed interesting phenomenon. As children started to arrive at school around 7:20, they had to wait outside nearby the gate. I was expecting that the school doors should open in few minutes, but I was wrong. More and more children arrived from different directions [see in the diagram /page 36/ of sections in time] and started to cumulate at the entrance, which was still closed. A quite chaotic situation had arisen, children were bored and ran, yelled, sat basically everywhere around. This fact complicated the situation around, when parents dropped other children in front of school. That created potentially extremely dangerous moment. Children, cars, scooters, parents, grandparents, dogs were mixed, moving all over the place. It lasted just a few minutes and then at 7:40 the entrance finally opened and suddenly the rush was over.



figure 117 Children are waiting for a school opening



Diagrams of children's transportation to school & showing an approximate number of how many coming from what direction



**Transportation**

This diagram is showing the ways of transportation of children to school. It captures a situation which takes only a few minutes but is filled with life & action. The data are based on 'in situ' observations taken during the morning on a day 2020-02-25.

Most of the children are walking to school alone from three main directions. The next group of children are dropped off by their parents in cars at the doorway of the school. Another category are walked by parents or grandparents and the last one uses scooter to enjoy the way on wheels.

The purpose of this diagram is to show an approximate number of children who are waiting at the entrance before the school gate opens. This creates a perfect opportunity to spend these couple minutes with play or just differently, since most of the kids are bored, running around. The bustle around the school is causing quite a dangerous situation while a lot of cars [parents of pupils] are passing around the school entrance.

More than half of all pupils are waiting at the gates before opening -diagrams 7:15-7:20, 7:20-7:30 and 7:30-7:40.

# PERCEPTION & PERSPECTIVE

[children, play and risk; how children perceive play and public space]

motto of RoSPA:

"As safe as necessary,  
not as safe as possible!"

[RoSPA - The Royal Society of Prevention of Accidents, UK]  
~ the largest play-safety organization in the world

**Risk, failure & mastery** are a trio that stick together. Each one interconnects the other. When children are taking risk, it encourages them to master that given situation, especially after the first attempt which they have passed with difficulty or failure (Solomon, 2014, pp. 32)<sup>1</sup>. Children are curious, not full of fear-precautions and want to explore the world. Unfortunately, usually concerns of parents as well as policies make it sometimes very hard or almost impossible for them. A quite common scene is overprotection and minimizing every possible risk in children's play opportunities. That results in taking away their freedom and opportunity to explore and encounter the world. By not letting them take responsibility for their own actions, we diminish their development for being independent. (Solomon, 2014) This aspect has been changing over time likewise the play itself. The goal of this chapter is to showcase this tendency and rejuvenate outdoor 'free play' containing the risk which gives children freedom and opportunities to learn.

**Taking risk** Risk is an evolutionary necessity. The risk in this sense is defined as a situation with an unclear outcome, nothing is predetermined and making choices may be part of risk taking. Neuroscientists state, in Solomon (2014), "--that we are wired to like activities which are helpful for our survival. Matter of survival means being exposed to uncertainty, so taking a risk and exploring it is a habit deeply rooted in our unconsciousness. In the case of children, nature has developed for them their own inner 'sixth sense', that prevents them from taking too much of a risk and end up hurting themselves." As Solomon (2014) writes, Sandsetter and colleagues believe: "young children have real fears, it is a biological weapon that helps them recognize things which are too advanced [they are not developmentally ready to succeed], but if children would have a chance to overcome some of their fears [like darkness, heights] they try to do so and end up learning valuable skills." Furthermore, neurobiologists established: "when children are taking risk, it leads to a development factor, which is testing their boundaries and forming a sense what is safe and what is dangerous." (Solomon, 2014, pp. 34) What could be better to test the boundaries than exposing children to the natural environment, that is by itself a great source of instability.

As Solomon (2014) is stating: "In another words, optimum amount of risk is a healthy part of growing up." To be honest how great it is, when you can run, almost fly, from a really steep slope or jump from some high place and after landing feel the unconditional pride and joy of being brave enough to do so! Or vanish, be lost, and then surprise your friends by jumping and scaring them. All these small victories count! Everything starts with going outside, doing something new -potentially dangerous, but taking the risk and do it! That is what makes life interesting.

**Failure** It is a tough, but crucial part of life. Learn to fail and then bounce back to succeed, is an important skill to develop during childhood. By failing children establish an internal regulation and sense of agency, that allow them to make good choices about themselves, their health and relationships. (Solomon, 2014, pp. 56) Psychological professor Grolnick warns that: "--parents should give their kids freedom to test their limits, otherwise they tend to give up too easily when they face a hard task. It is necessary to give children a chance to do something hard and succeed in it, even if it means that it leads to a several failed attempts first." (Solomon, 2014, pp. 56) If we won't let children fail, they won't know it and when they grow up, they won't be able respond to a failure. That could lead to a total meltdown and serious psychological problems. Especially, if we consider the pressure of today's society that is very much achievement oriented. To be successful means learning failure and not giving up and keep on going forward.

**Mastery** In other words -succeeding. After absorbing a failure, but keep on trying and digesting many attempts, one day, a mastery will finally come. The mastery of something is introducing a feeling of success, which for children is very important. Mainly, because it is reinforcing a sense of personal achievement and supporting self-confidence. It is also a pleasurable moment of victory and self-sustaining event that children want to repeat, what they have just accomplished. Then the urge of pushing themselves a little harder with each success is the important phase for development and learning. The reward of their success is the feeling of triumph and the open possibilities of entering next level. (Solomon, 2014, pp. 56)

**Free play** The definition could vary a lot, but in the sense of encountering risk as spirit of knowledge could be explained as a spontaneous contact with the outdoors as essential source for children's development. 'Free play' outside provides endless stimulation, diversity and information richness, but also by shifting conditions, high degree of uncertainty is included. That brings challenge, surprise, risk and even prosper of failure on the table, yet adversity unveils opportunity for personal growth and builds self-esteem. (Kellert, 2012, pp. 133) Furthermore, Kellert (2012) states, by children coming face to face with and encountering an abundance of nature and all living creatures, life suddenly appears irresistible. The source of instability, unpredictability and sometimes even mystery of nature is a great foundation for learning and maturation.

**Risk & Space** In conclusion, this chapter is introducing the high value of risk, what it means, its consequences and where it could be found. The origin of encountering risk is for sure the natural environment itself, because the living world is dynamic, enriching and has a potential for setbacks and failure. (Kellert, 2012, pp. 136) Unfortunately, in the urban structures of our cities, we usually cannot find enough sources of nature. And even if we can, it is usually abandoned and forgotten by all or marked as too dangerous to be around, by parents and policy. My approach would be to try to rejuvenate those places by giving attention to them with attractive, adventurous structures bridging the gap between nature and the artificial world. The idea is to naturally rise up the origin of the landscape and to find the potential features that enhance the experience of danger. Even the UN [Convention on the rights of children] is asking a question: "What is safe enough? The challenge for practitioners may be to review the outdoor space and to think about ways to increase the risks, rather than minimizing them." (Solomon, 2014, pp. 150) The situation was not always as it is now, that's why, I want to introduce the development of risk, failure, mastery play in the public space.

figure 18| Climbing child





**Play over times** The focus on children and play opportunities for them, as part of architectural and urban design, could be dated after The Second World War. Over times this topic has dramatically changed and developed, but not entirely in a good direction.



figure 19 | Play in 1945.

1945-46



figure 20 | Play in 1950s. Aldo van Eyck's playground

1950s-70s



figure 21 | Play nowadays.

2005-20

**After 2nd WW** The sites destroyed by bombs -ruins of houses made very tempting play areas. Generally, children tend to seek 'dangerous' places for play and damaged sculptures of broken aeroplanes were the best spots to hide and play. Wartime theme play was and still is very popular. Adventures, heroic acts, shooting -all this sounds super interesting to children. (IWM Staff, 2018)

Nevertheless, children during this period were spontaneous in play because there were no playgrounds, no play equipment -nothing except ruins. So, they acclimatized and found way to spend time outside with peers. (IWM Staff, 2018)

**Modernism in 60s** Trend of designing play equipment got fashionable during this time. A number of famous architects and artists put their attention to child play design. Quite a lot of proposals were realized, but the attitude was completely different than what we can find nowadays. The playgrounds were designed for specific place as a part of a public space in the city. They were intentioned not just for children, but for everybody and they offered many possibilities to use them. It was not necessary to use a fence for the child safety, because children tended to look after each other.

During this period, children had closer relations with their surroundings. They used to play in the streets and basically everywhere where they wanted. Children also had been more inventive in terms of play and imaginations, since they did not have any devices to do that for them. (Bishop and Corky, 2014)

**Nowadays** The play has become mostly virtual and triggered by something or someone. The play started to be more restricted. The example of that are an outdoor caged playgrounds with standardized play elements. They are alienated from their surroundings by the fence. It is constructed like that to 'protect' the child, but making the play safe does not always mean to put a fence around. Unfortunately, this misinterpretation became a convention.

Children incline to be attached -to phone, computer, television. The computer game is the most popular game now, because being and playing outside is 'too' dangerous. Also the virtual, artificial world started to be more attractive than the world outside.

## NATURAL ENVIRONMENT

[deeper analysis of the surrounding natural environment and psychological influence]

Richard Louv and Robert Pyle draw attention to a drastic decrease in children's direct contact with nature, which potentially effects physical and mental health and development. (Kellert, 2012, pp. 133)

**Biophilic design** The definition of biophilic is: life enriching features that evoke a sense of well-being that rejuvenates our body and soul; strengthen our mental capacity and increase creativity and productivity. Overall, nature forms the basis of fulfilment in our life in physical, mental, and spiritual way, because our bodies reply to an experience through natural systems. Finally, humans are a biological species as any other and even though we don't want to admit it, we continue to rely on nature to achieve physical and mental health. No artificial artefacts can replace that. (Kellert, 2012)

A fractal feature is a natural character of chaotic complexity evoking an organized chaos. The nature itself designed a fractal method, with all the mathematical specifics to showcase a beauty in disorder. As Kellert et al. (2008) saying, the extended use of informational content that allow people to think in different levels of complexity, as well as establish a neurological connection that provides us with emotional nourishment and by extent a sense of well-being. The complex result of the fractal is highly stimulating for its mystical accuracy, that could not be identified on a first sight.

In the chart 1 and 2 /page 41/ is possible to read the approach of biophilic design towards the proposal and connection to outcomes for children's development.

figure 123 Floral fractal



figure 122 Jizera mountains during the year

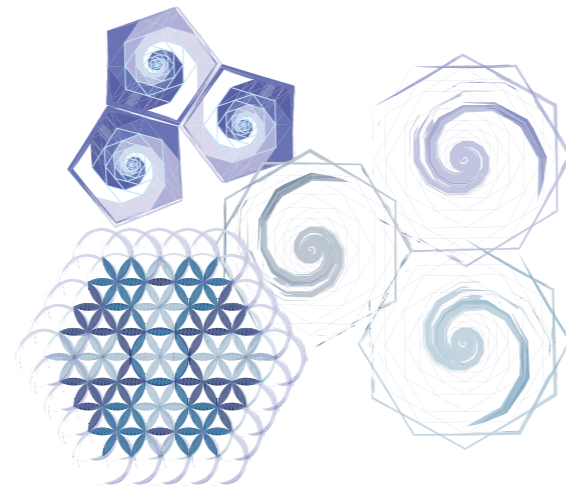
Chart 1\_14 Patterns of Biophilic Design by Kellert & Wilson 1993.

- 1. visual connection
- 2. non-visual connection
- 3. non-rhythmic sensory stimulation
- 4. thermal & airflow variability
- 5. presence of water
- 6. dynamic & difused light
- 7. connection with natural systems
- 8. biomorphic forms & patterns
- 9. material connection
- 10. complexity, order
- 11. prospect
- 12. refuse
- 13. mystery
- 14. risk

NATURE IN SPACE

NATURAL ANALOGUES

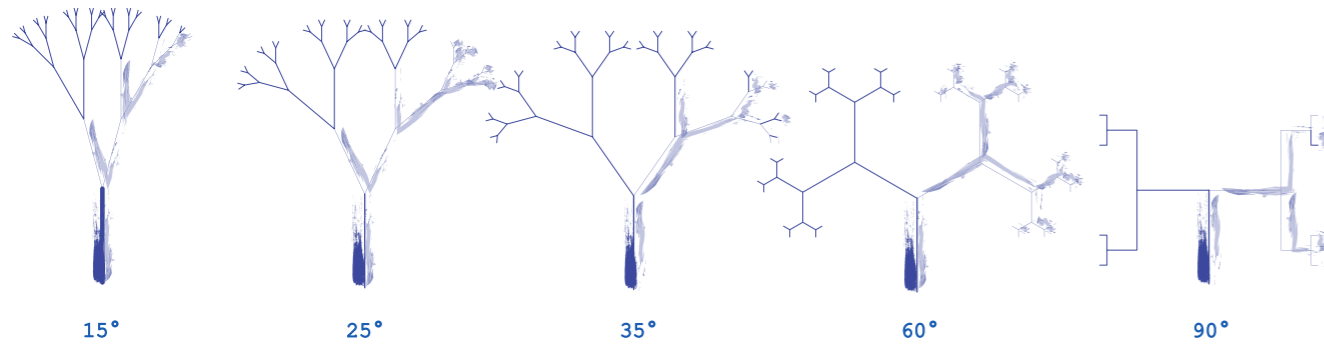
NATURE OF THE SPACE



**definition of FRACTAL:**  
a complicated pattern in mathematics built from simple repeated shapes that are reduced in size every time they are repeated

**Fractal geometry** Defined as a variation on one theme or structure, whose individual elements occur in varying scales, sizes and shapes. Everything is linked to an overall model or pattern, in other words self-similarity [such as panelling, ...]. The illustration below shows an example of division in different angles. (Kellert, 2012)

**Tree** Branches of trees grow continuously in particular 'fractal' patterns. In nature the systemic scheme is not so precise as the branches in the diagram below, but the idea of it is the same. As the tree grows, branches on the top are thin, but higher in numbers. On the other hand, the branches closer to the trunk, get selected [only the strongest ones survive] and get thicker with age. The shapes are amazing and creates beautiful shapes, that inspired me for the design proposal.



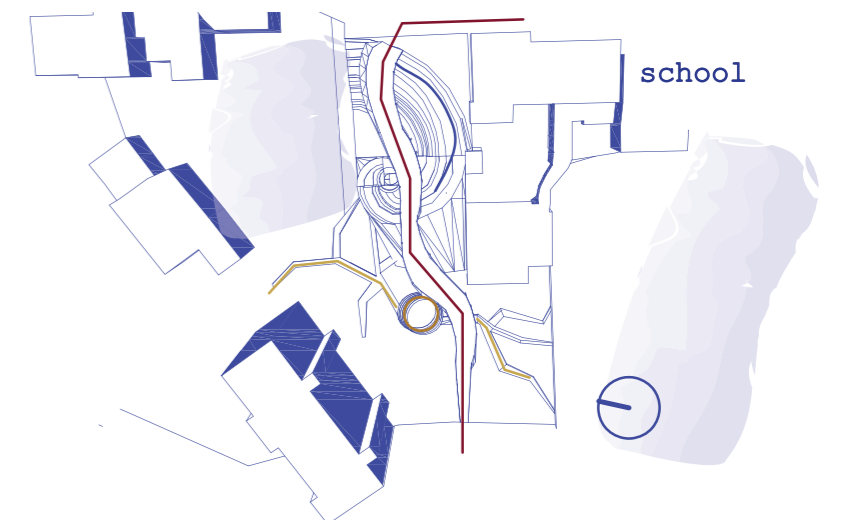
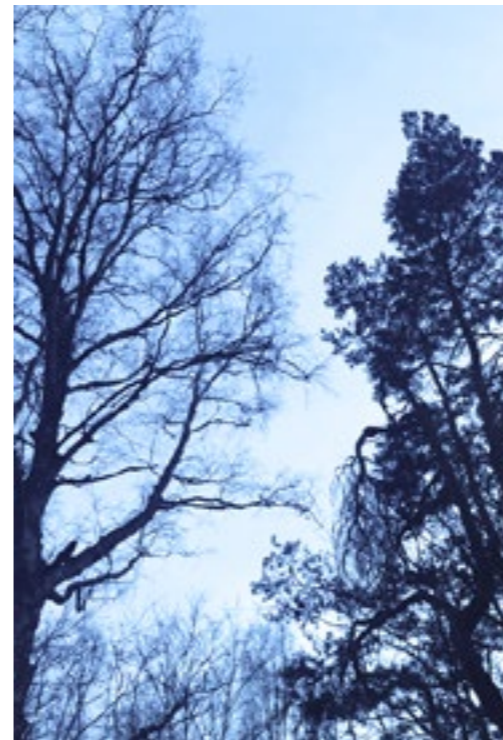
• Fractal geometrical example of branching the tree in different angles

Chart 2\_How nature affecting children, based on text in Kellert, 2012.

towards NATURE	> children's reaction	> conclusion
1. affection	> emotional attachment	> development for caring and compassion
2. attraction	> aesthetical appearance	> handling adversity and self-esteem
3. aversion	> axiety and fear	> cultivating respect and confidence
4. explotation	> material benefits	> sense of reality, skills and autonomy
5. reason	> contact	> development of cognitive skills, evaluation
6. dominion	> control over nature	> develop. physical & motor skills, courage
7. spirituality	> sense of meaning	> relation to world beyond themself
8. symbolism	> representation	> promote communicative skills, personality



figure |24 Photos of trees & lichen



• Use of this fractal phenomenon in the proposal

# DIAGRAM OF THEORY SUMMARIZATION

[systematic chart of the project\_conclusions for the design approach]

## chapter I\_INTRODUCTION

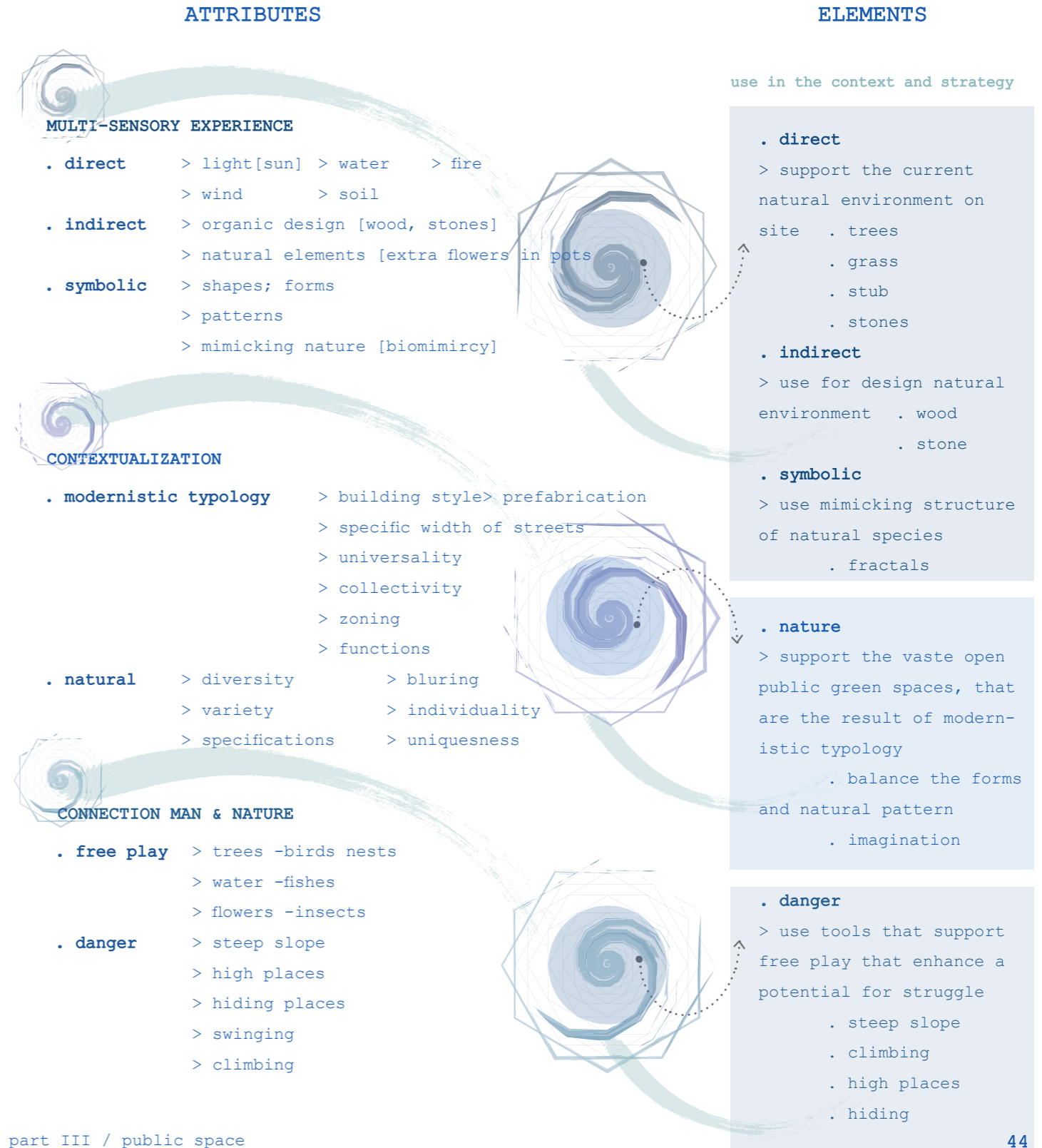
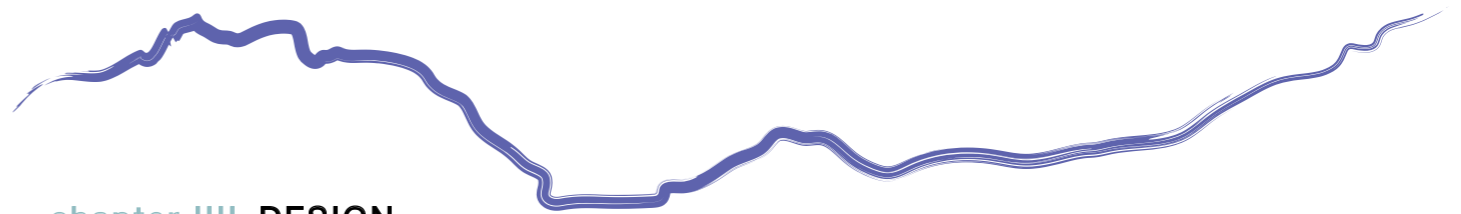
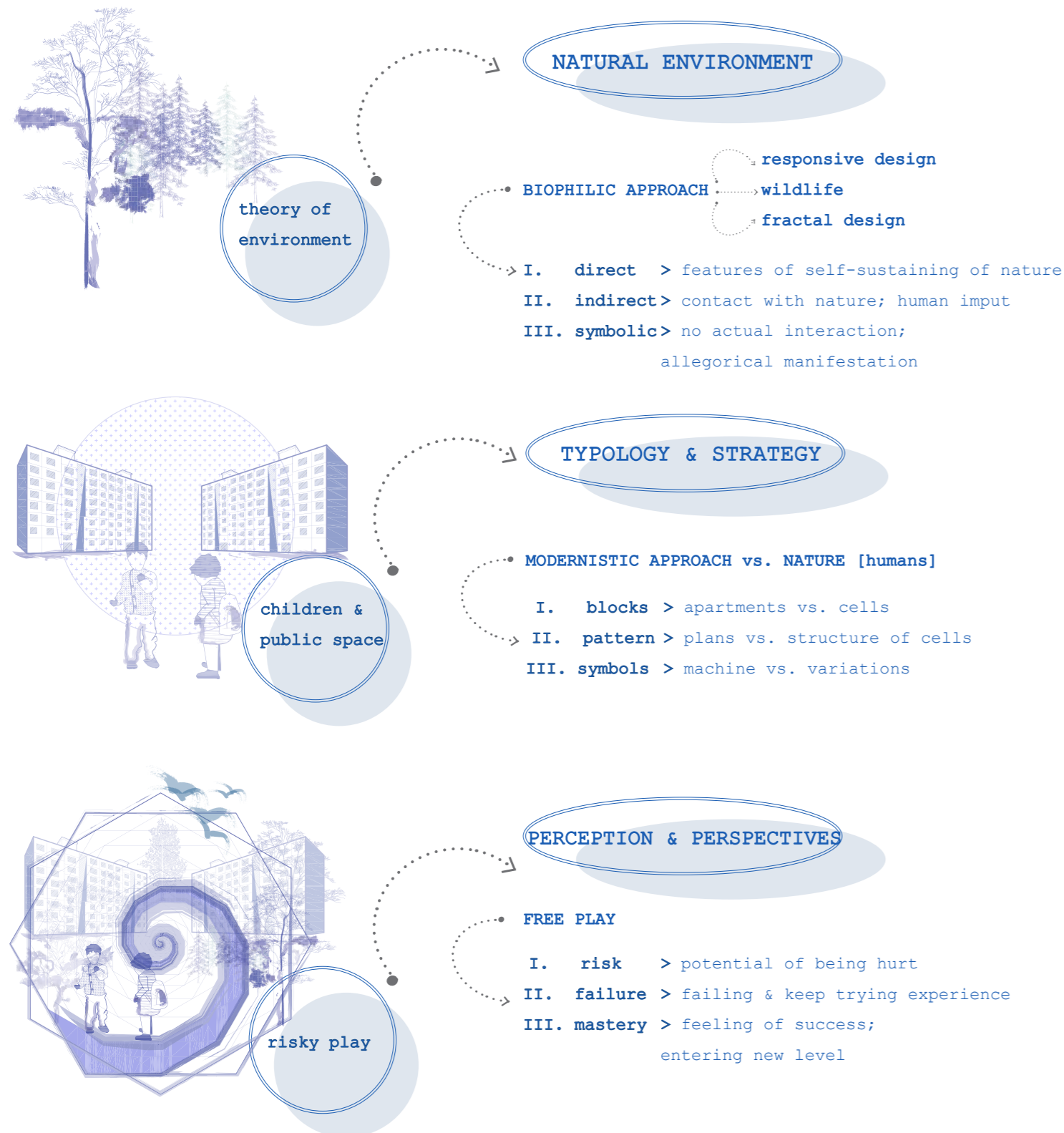
link to theories & context

## chapter III\_SPACE

theory behind the design proposal

## chapter IIII\_DESIGN

link to theories & context



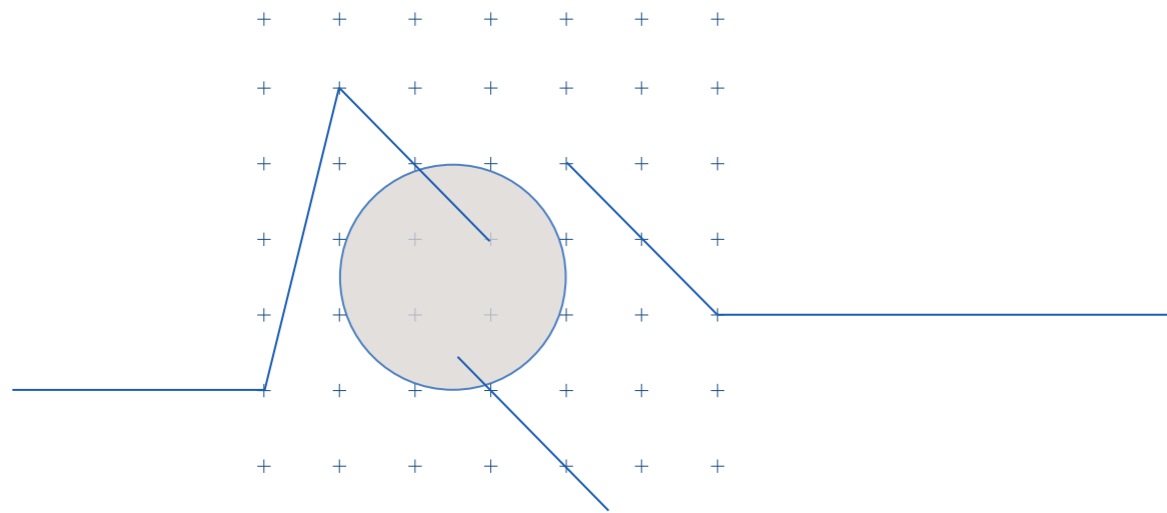


# D E S I G N

Focus on three elements of play experience.

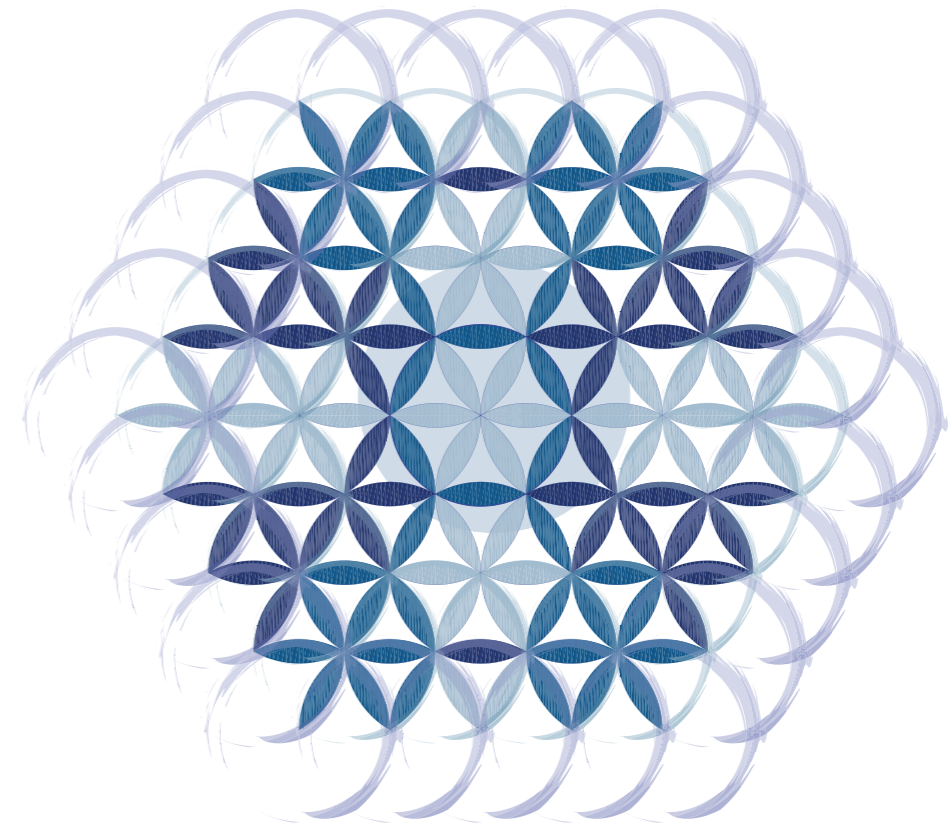
- matter of danger, risk
- materiality, nature touch
- free play

> reconnection with nature



"I think of playgrounds as a primer of shapes and functions; simple, mysterious, and evocative; thus educational."

-Isamu Noguchi



# INSPIRATION

[examples of play design from different perspectives]

Design is not making beauty, beauty emerges from selection, affinities, integration, love.

Luis Khan

--"Artists, who must pledge not to replicate the pieces they provide for the program, get the chance to adapt art to everyday routines. Most significantly, the program demonstrates how a society can use art to support kids' activities, including climbing and hiding, as a means to improve life in the city and, by establishing unique pieces, forge a sense of identity and place." (Solomon, 2014)<sup>1</sup> This beautiful statement is basically summarizing everything I would like to achieve through my design. Furthermore, I chose to study the work of three authors, with diverse backgrounds and different contexts, of playgrounds as an inspiration for the design proposal. I felt the need to understand the roots of play through various perspectives to be able to grasp the topic of play coherently. I tried to find out the development over time, when and how playgrounds had started to be seen as something specific in the city scape.

The first example is a famous architect Aldo van Eyck who was designing and building in the West-European context, in the Netherlands. He could be seen as a rebellious designer against the modernistic movement in the 1950s, mainly because of his 'realm inbetween' thinking. He states: "--space has no room and time, it is not a moment for man. He is excluded. We need to create places that fostered dialog and stimulated community life." (Withagen, Caljouw, 2017)<sup>2</sup> Eyck had created over 700 playgrounds all over Amsterdam, each one was specifically suited into the city structure and context. His strategy was to 'infill' the city with life and never felt the need to use fences. He created play equipment which does not have a single purpose, neither a definite meaning. It was rather simple, clear elements that are stimulating the imagination.

The second author of playground areas is Isamu Noguchi, an American artist, who mainly focused on sculpting. He had been interested in assets where art could shape urban landscapes and his first ambitious vision of experimental play appeared in the 1930s, but continued over years until 1980s. In 1950s, MoMA was interested in creative, artsy aspects of playgrounds, he started to be seen as an icon of playground development. Unfortunately, he had never been completely understood by the city management with his unique approach and only two of his playground designs were realized in the US and the other one in Japan, just partially.

The last of the three examples is a series of play-statues from different designers for many of Prague's housing estates in former Czechoslovakia in the East-European context. In the years of 1960s, 70s and 80s was one specific in the Czechoslovak's law, as Karous (2010) declares: "Huge amount of orders was guaranteed by law, that obliged every state building (overwhelming majority of all building projects) to spend 1% - 4% of its budget on „decoration“. This '4% art' comprised then aesthetical dominant features around forming housing estates." This feature led to the creation of fantastic art pieces in the public space, some of them were designed also for children and focused on play.

figure |25 Isamu Noguchi. Slide Mantra, 1986



figure |26 Playscapes, Piedmont Park, Atlanta, 1975-1976

To consider the city is to encounter ourselves.  
To encounter the city is to rediscover the child.  
If the child rediscovers the city,  
the city will rediscover the child - ourselves.  
LOOK SNOW!  
Amiraculous trick of the skies - a fleeting correction.  
All at once the child is Lord of the City.  
But the joy of gathering snow off paralyzed  
vehicles is short-lived.  
Provide something for the human child more  
permanent than snow - if perhaps less abundant.  
Another miracle.

*The play elements are more durable than snow;*  
- Aldo van Eyck; 1962

# INSPIRATION FROM REFERENCE PROJECTS

[systematic chart of projects\_identifying different approaches]

## CONTEXT

author & context

## STRATEGY

approach towards the play design

## ELEMENTS

shapes & forms

## CHARACTERISTICS

of design artifacts

## OTHER EFFECTS

brought by design artifacts

### ALDO VAN EYCK

western Europe - Amsterdam; Netherlands



> 700-860 built playgrounds

“the REALM INBETWEEN”

~provide a bunch of REAL places for REAL people & REAL things”

- Eyck. 1962.

figure |27 Playground; Buskenblaserstraat; Amsterdam.

[1947 - 1978]

‘INFILL’ strategy

~ striving for merging the playgrounds with the city

- . no sharp boundaries
- . site specific
- . provoke children to engage
- . cooperative activity
- . elementary forms
- . for all

MATERIAL

- . metal
- . concrete
- > materials to fit the environment
- > ‘brut’ materials

ELEMENTS

- . sandbox
- . climbing dome
- . hanging poles

THE OBJECTS are ANYTHING specific

~ not a single definite meaning which provide open and creative attitude

- > stimulate children’s imagination
- > allow to move around it
- > use acrobaticism & supplements
- > active exploration
- > action possibilities

- I. a city should be a playground
- II. composition as important as the equipment itself
- III. “Whatever space and time mean, place and occasion mean more.”

STANDARTIZATION

~ the EQUAL distribution between blocks [branches, stones etc.]  
> negative effect on playability  
> aesthetic motives  
> not important for play  
> symmetrical pattern

### ISAMU NOGUCHI

US & Japan - New York; Sapporo



> 3 realized playgrounds  
> but adressed as the founder of new type of play

“how ART could shape & mold urban landscapes.”

- Noguchi. 1930s.

figure |28 Detail of model for Playground; Kodomo No Kuni.

[1933 - 1988]

‘LANDART’ strategy

~ precedence of ambitious vision for public land  
~ beyond placement of monumental sculpture

- . site specific
- . environmental
- . broader philosophy
- . educational potential
- . high aesthetic value

MATERIAL

- . earth [earth modulation]
- . concrete
- . metal
- > materials to fit the environment

ELEMENTS ‘ 5 S-ES’

- . swing
- . slide
- . sandbox
- . seesaws
- . spray showers

UNIQUE FIGURE

~ transcending the traditional boundaries between sculptor and landscape architects

- > adopted site specific art
- > land/earth sculpting
- > artfully designed play equipment

- I. fitting the environment & landscape
- II. experimental; supports free spontaneous play
- III. educational potential of playable art in public space

SIGNIFICANT EXPANSION

of public interest in public art scene  
~ leading figure of new playground movement [Richard Dattner continued]  
> MoMA’s influence in 1950s by investments in art-designed play equipment

### OLBRAM ZOUBEK & EVA KMENTOVÁ; others

eastern Europe - ČSSR [former Soviet Union]



all over newly built estates  
> different authors

[1950 - 1989]

‘SCULPTURE’ strategy

~ placement of monumental sculpture

- . art for public space
- . unique character
- . playable
- . solid
- . new life inbetween ‘greyness’

MATERIAL

- . concrete
- . [metal]
- > brut materials to fit the political agenda

ELEMENTS

- . slides
- . hanging poles
- . climbing

SCULPTURE

~ Art in Public Places Program was part of the newly building program

- > discrete
- > monumental
- > major names of contemporary art scene which was allowed by the leading party

- I. unique & beautiful
- II. massive & interesting art design that has several use
- III. art as natural part of public space

FILLING THE EMPTINESS

~ new building style brought waste open public spaces in between building  
  
> allegorical connection with the surroundings  
> high aesthetic value  
> interesting material use

figure |29 O. Zoubek, E. Klementová; Sculpture for play.

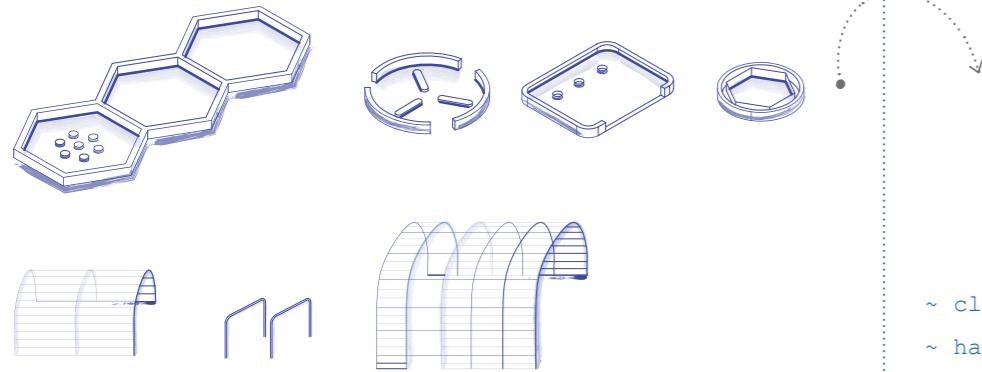
# ELEMENTS

[picture / illustration of elements and what they do and how enhance the project goal]

## PLAY ELEMENTS

author & designs

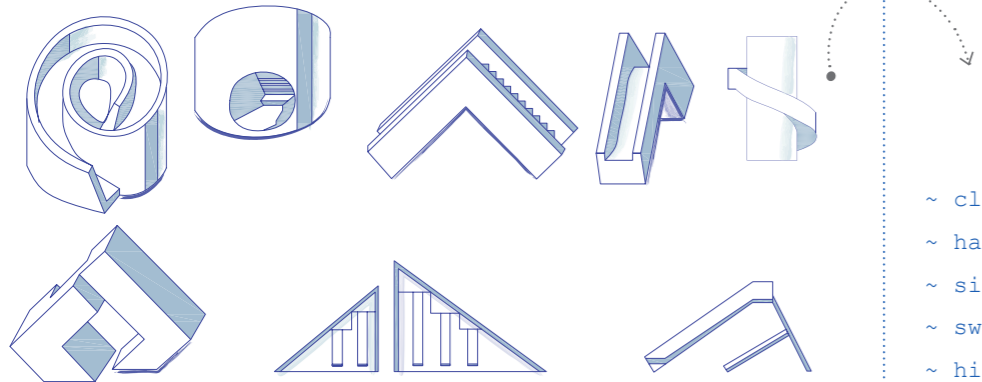
### ALDO VAN EYCK



- . simple shapes
- . geometrical forms
- . playing with materials
- . different patterns
- . certain standardization

- ~ climbing
- ~ hanging
- ~ sitting
- ~ jumping

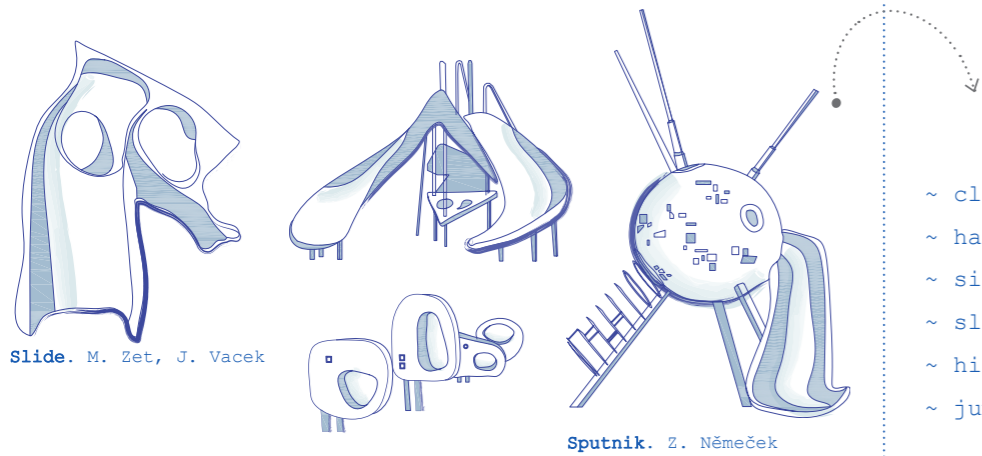
### ISAMU NOGUCHI



- . volumes
- . earth structure
- . simple shapes
- . geometrical
- . sculptural

- ~ climbing
- ~ hanging
- ~ sitting
- ~ swinging
- ~ hiding
- ~ sliding

### OLBRAM ZUBEK & EVA KMENTOVÁ; others



- . organical
- . creative
- . imaginary
- . sculptural

- ~ climbing
- ~ hanging
- ~ sitting
- ~ sliding
- ~ hiding
- ~ jumping

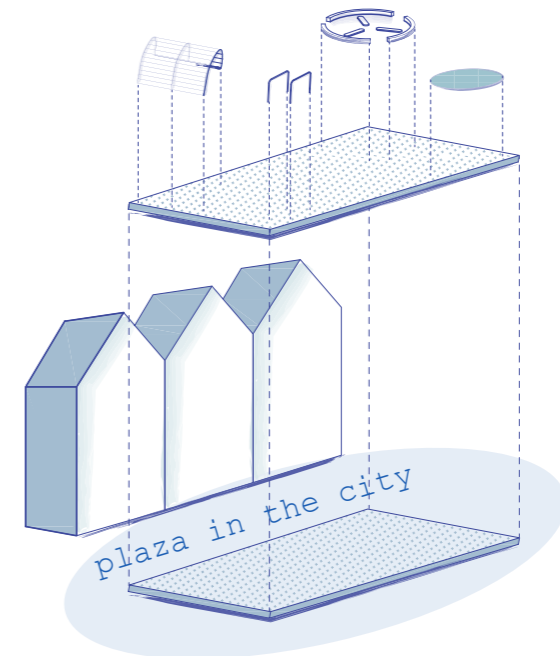
Slide. M. Zet, J. Vacek

Sputnik. Z. Němeček

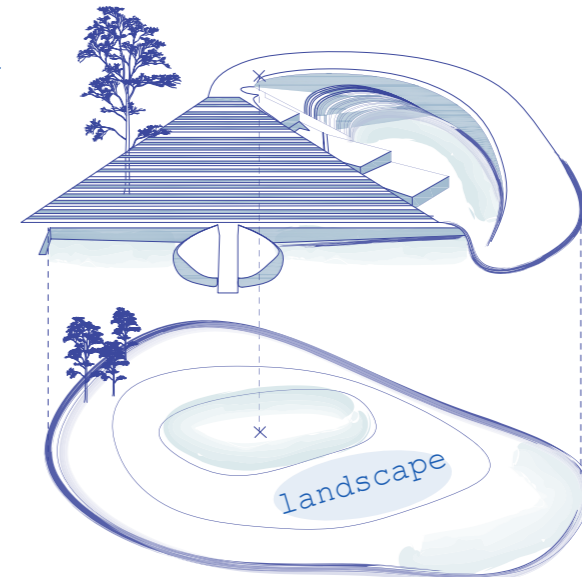
## ELEMETS & CONTEXT

placing with surroundings

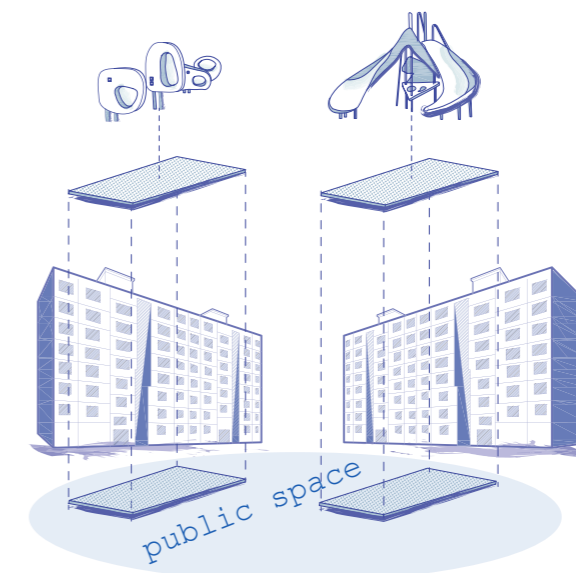
- . direct connection with the city surroundings
- . fitting the spatial requirements of a cityscape
- . for everybody



'INFILL' strategy  
~ striving for merging the playgrounds with the city



'PLAYSCAPES' strategy  
~ fitting the art into public space and its specific environment



'SCULPTURE' strategy  
~ monumental playsculpture from known artists

# CONCEPT

[the project idea and the design proposal connection]

I am convinced that standardised playgrounds are dangerous, just in another way: When the distance between all the rungs in a climbing net or a ladder is exactly the same, the child has no need to concentrate on where he puts his feet. Standardisation is dangerous because play becomes simplified and the child does not have to worry about his movements.

- Helle Nebelong.

The design concept is based on a series of studies and analyses of the specific environment of the housing estate Šumava, which led to several important spaces for the interventions. The proposal contains a number of play-land-sculptures which are allocated to a specific interesting space that supports the ideas behind the free play action and are situated nearby the main tracks which children take to get to and from school. All these spots are possible to see on /page 50/ where a synthesis of all the important analyses which were made. The proposal is especially targeting children in the primary school age and trying to introduce them to this new urban scape full of potential for play and excitement. The interventions should be seen as places not just for play, but also for a child's small discoveries, socializing, moving and just enjoying the natural environment of their surroundings.

However, the interventions are not exclusively for children, the public space where all the small projects are planned is by definition -for all and that is how it should be recognized. The idea is hidden in the abstractness and simplicity of the proposals and depends only on people, how they decide to use it.

**DESIGN FOR children's development**  
> enhance these skills

**I\_PHYSICAL skills**

**1. basic movement**

- > running
- > jumping

**2. physical**

- > strenght
- > endurance
- > speed
- > flexibility

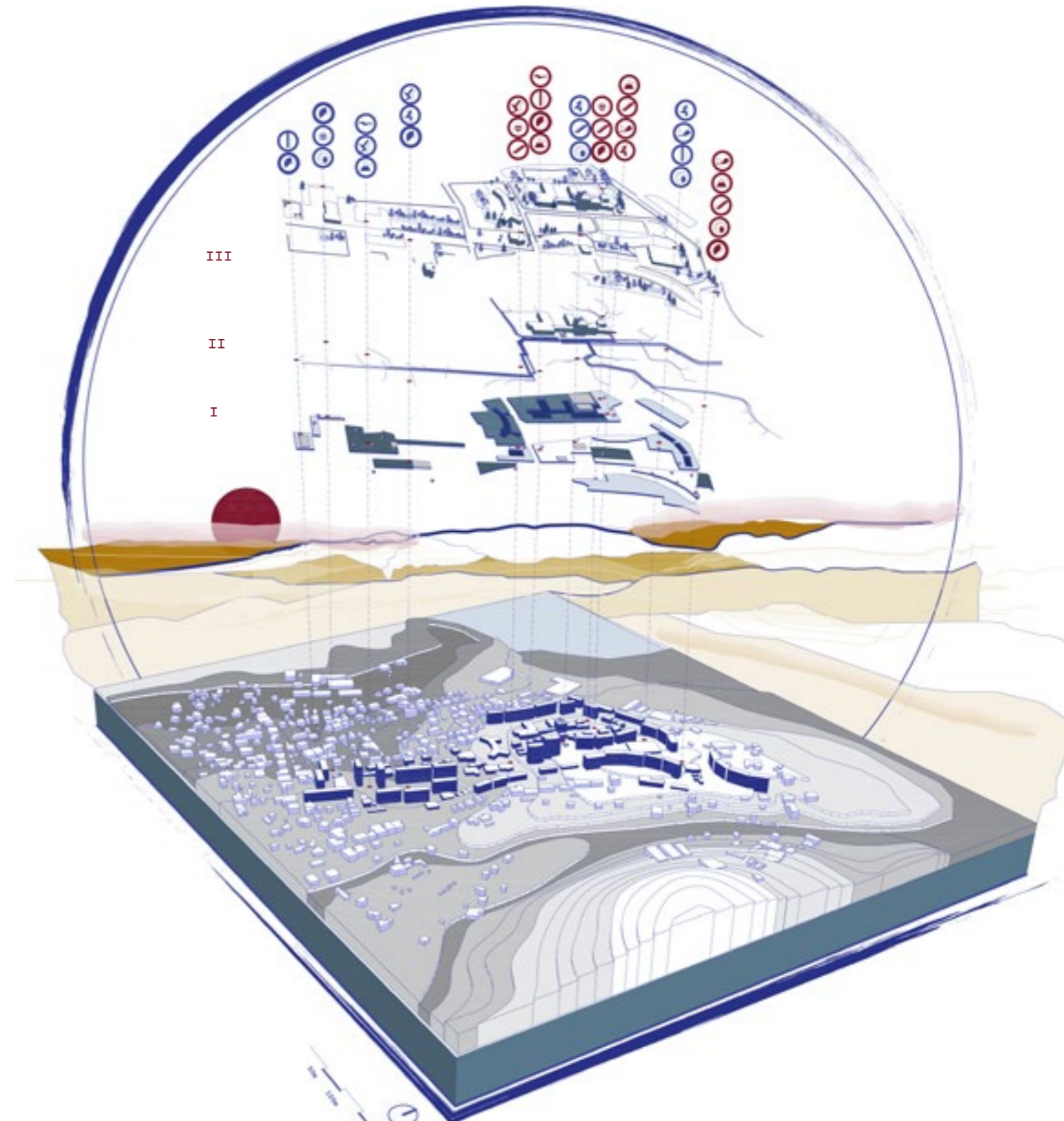
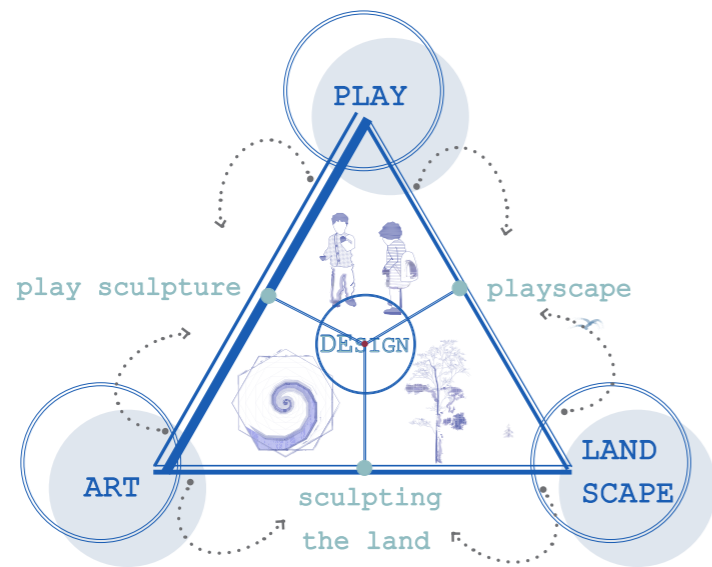
**3. motor skills**

**II\_INTELECTUAL skills**

- > abstract thinking
- > decision making

**III\_SPIRITUAL skills**

- > empathize
- > understanding unity
- > natural elements



**ICONS of attributes enhancing the experience of nature & danger**

view	needle tree	the chosen spots for interventions
hide	leafy tree	other potential spots
slope run	insects	the area
height	birds	the spots for the interventions
speed	mammals	

**I analysis of public space**

- highly cultivated plots, parks
- more wild
- official playgrounds
- interesting objects

**II analysis of kids flow to school**

- tracks by foot
- the waiting spot
- the school entrance

**III analysis of nature**

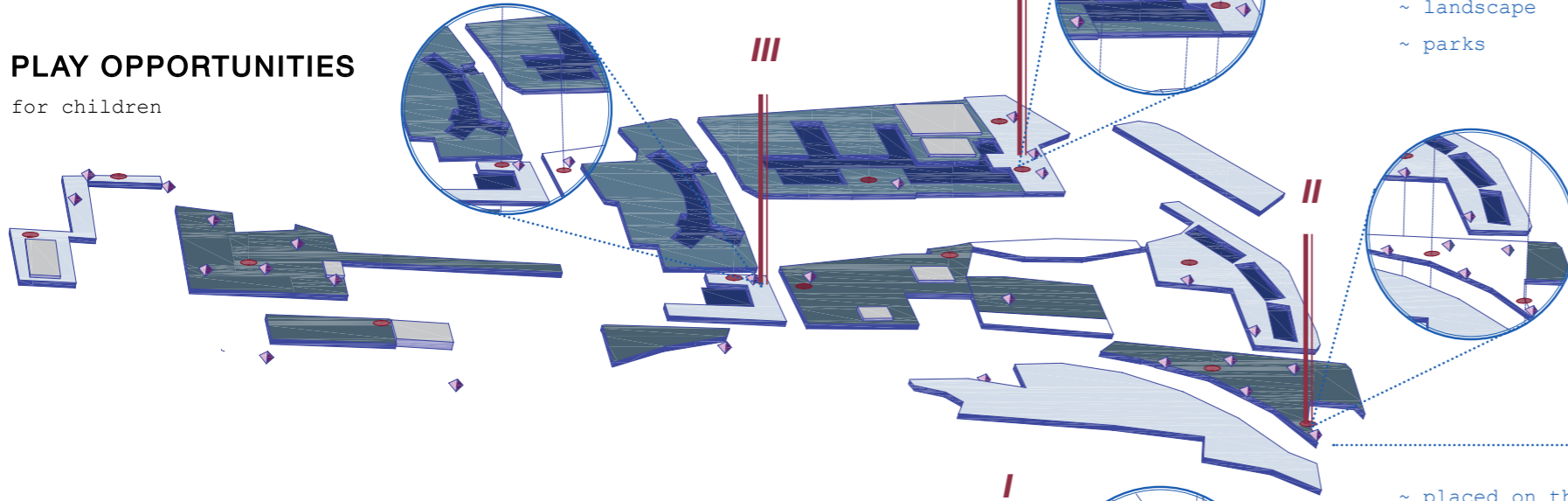
- trees and greenery
- paths for walking

# ANALYSES

[3 analyses that delimitate the spots for the proposal]

## PLAY OPPORTUNITIES

for children

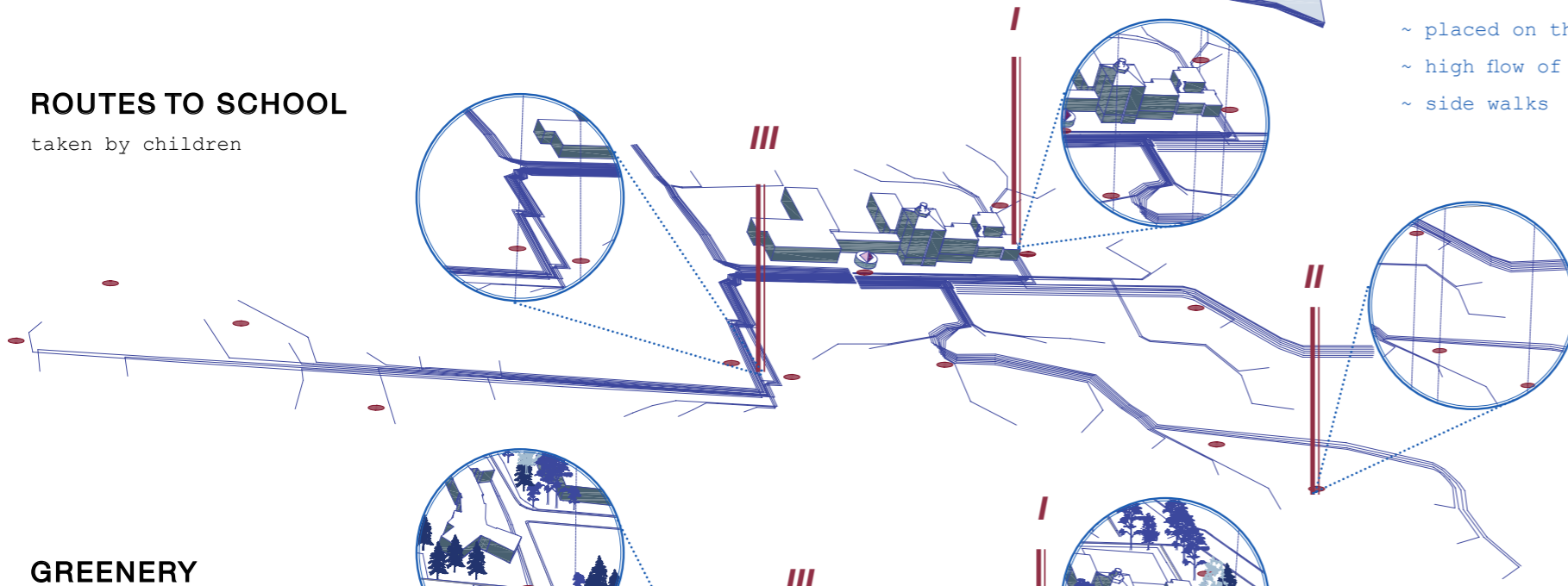


### DELIMITATION of the 3 spots

- ~ placed nearby play landmarks
- ~ topographical advantages
- ~ landscape
- ~ parks

## ROUTES TO SCHOOL

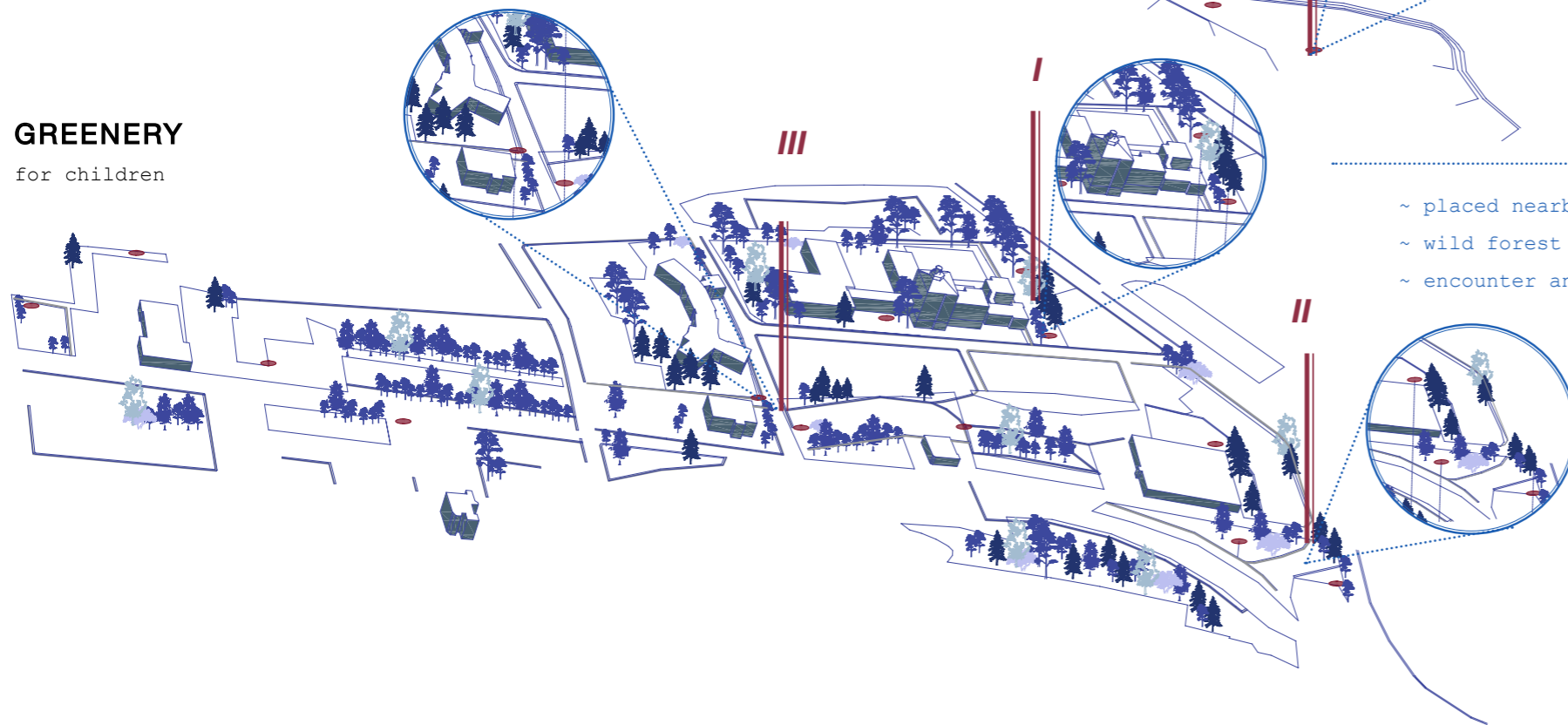
taken by children



- ~ placed on the shortcuts
- ~ high flow of kids
- ~ side walks

## GREENERY

for children

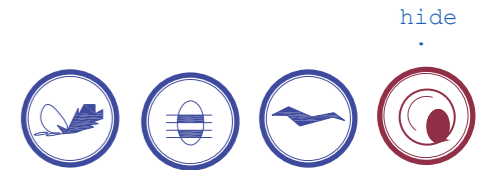


- ~ placed nearby greenery
- ~ wild forest
- ~ encounter animals

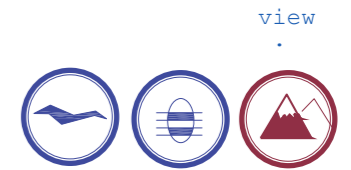
### INTERVENTION I



### INTERVENTION II



### INTERVENTION III



### INTERVENTION I



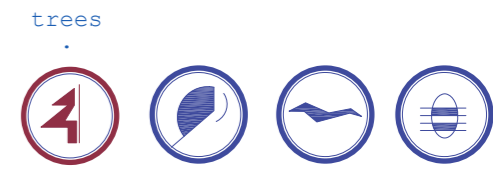
### INTERVENTION II



### INTERVENTION III



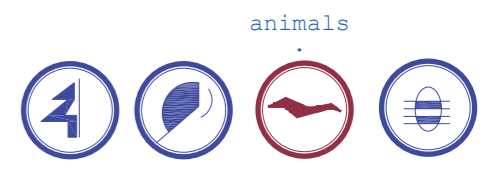
### INTERVENTION I



### INTERVENTION II

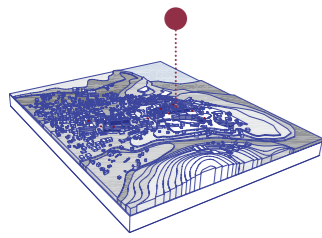


### INTERVENTION III

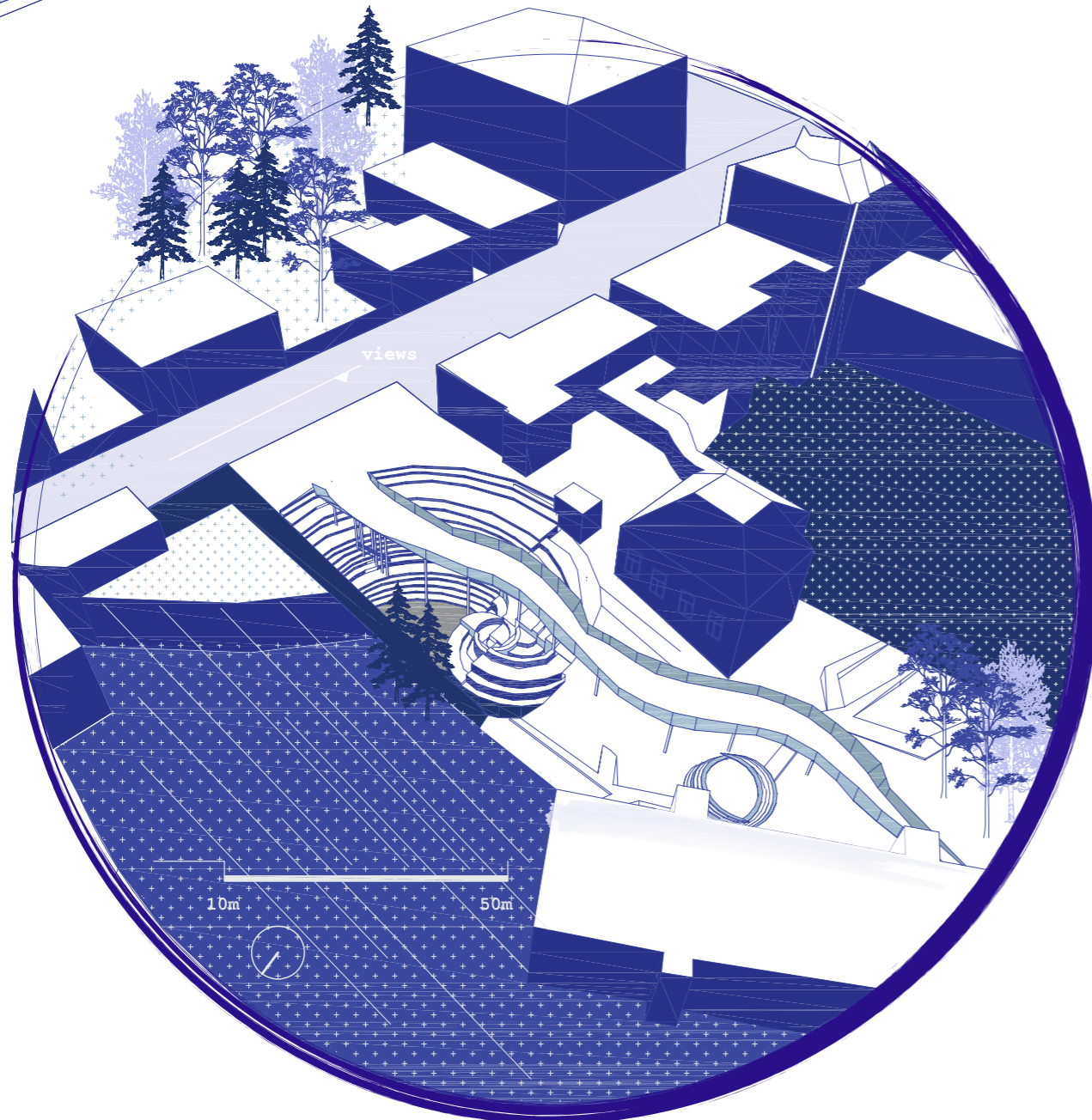


# PROPOSAL

[series of interventions that supports the thesis concepts]

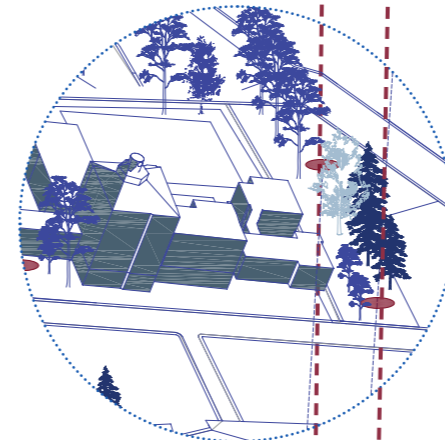


**Intervention 1** This proposal takes a place just nearby the school. It is placed in the quite forgotten space that is full of trees and steep slopes. Through it leads a shortcut between two roads, the top one heads to the school. Just in the middle lies a beautiful hidden place under the pine and spruce trees that has quiet atmosphere and creates a perfect spot for hiding and escaping the world for a little while.

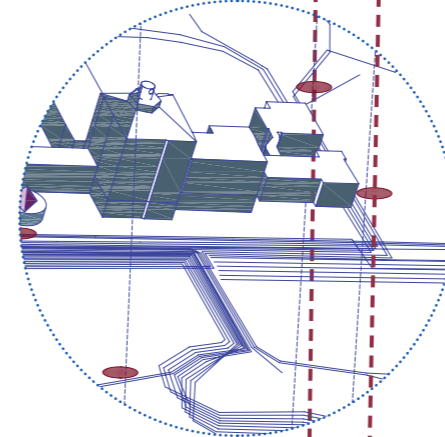


• Bird-view perspective on site with intervention 1

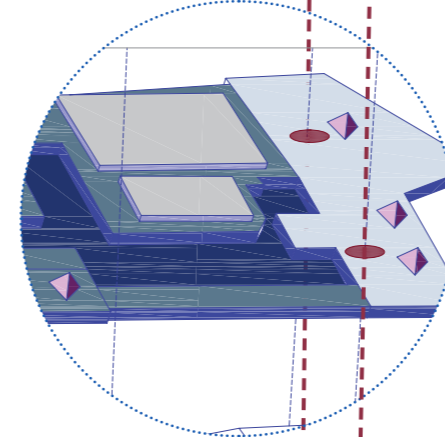
## Intervention 1



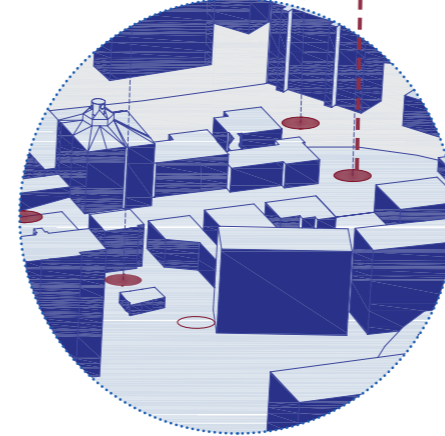
greenery analysis



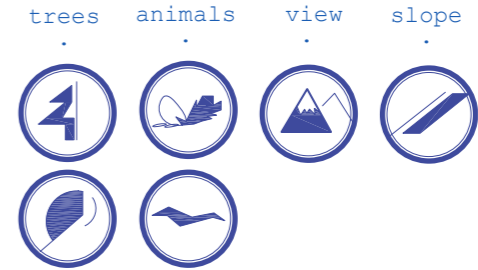
routes to school analysis



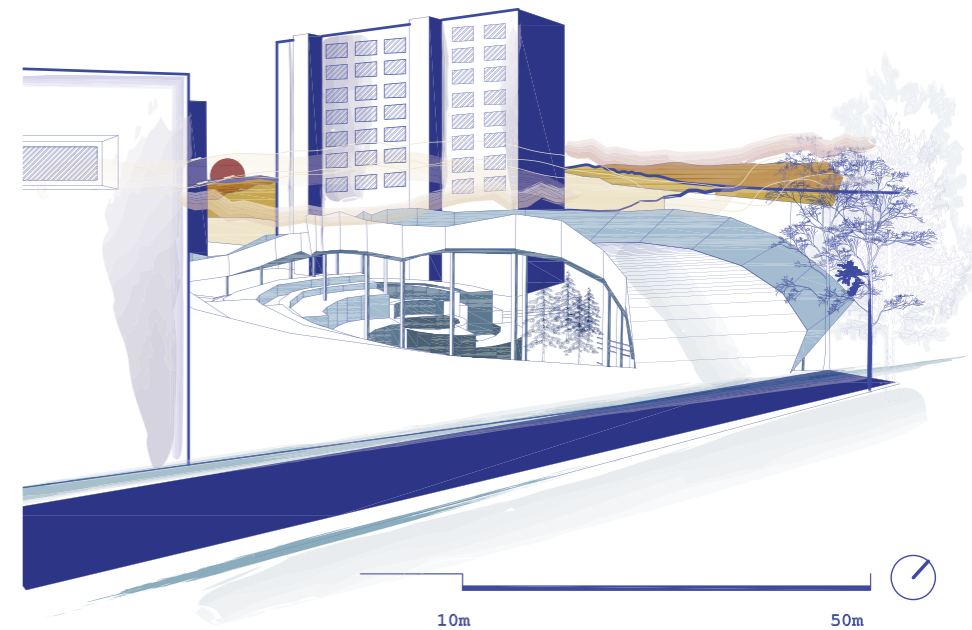
place spaces for kids analysis



buildings with picked spots



The proposal contains 4 main elements. The first one is a 'path' which is a wooden platform leading above the site. The second element is a 'stairs dome' that follows the topography of the place and ends on the hidden spot below the pine trees with cylindric dome for hiding. The third attribute is a circular undulating ring with 6 level layers. The final one is a network of wooden paths corresponding with the varied surface heights.



• View from the road, leading to the school

location on the hill gives the place certain character

the slope gives the site great view & opportunity to meet a bird, the sky is the limit

many needle-pine trees on which branches is possible to reach the sky

perfect spot for hiding and meeting new insects friends & discoveries

slopy & different height allow jumping, running in high speed

small alley of huge maple trees opportunity to find a squirrel

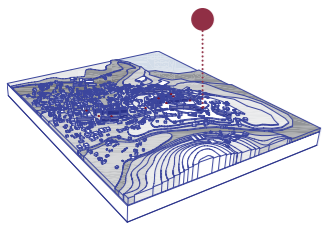
school

- |  |           |  |             |
|--|-----------|--|-------------|
|  | view      |  | needle tree |
|  | hide      |  | le tree     |
|  | slope run |  | inse ts     |
|  | height    |  | irds        |
|  | speed     |  | ls          |

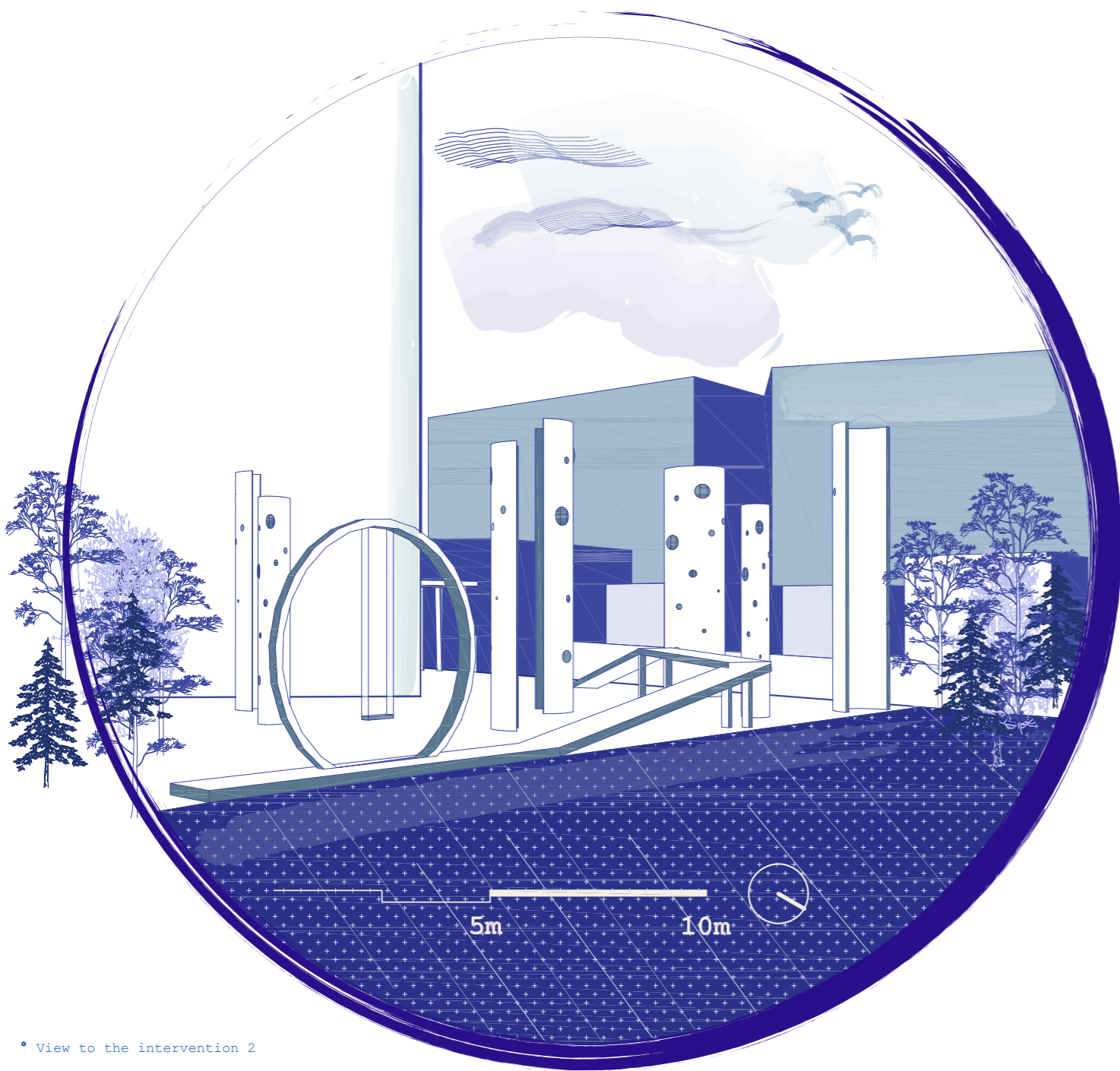
10m

50m



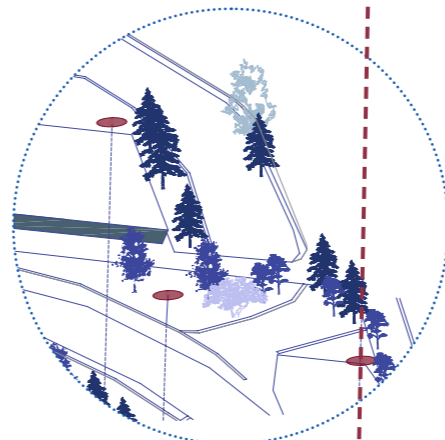


**Intervention 2** The forest circle intervention is located in the northern part of the estate area. It has a unique vibrant character. The location itself could be described as a very wild-looking green corner. It is at the edge of a high block of flats and the site is disappearing into the forest behind it. There is a steep slope which acts as an 'invisible' border between the forest and the intervention ground and protects children from the road under the forest. The site is situated on the topographical top of the estate and offers a beautiful view on the opposite forest hill crossed by a railway trail.

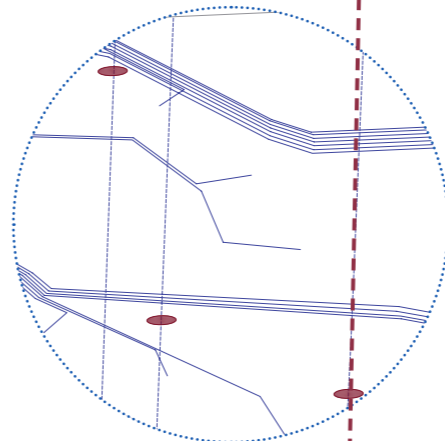


• View to the intervention 2

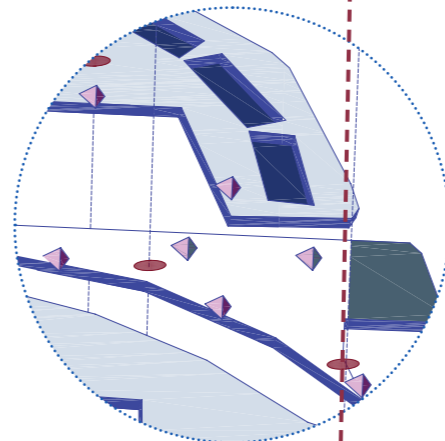
**Intervention 2**



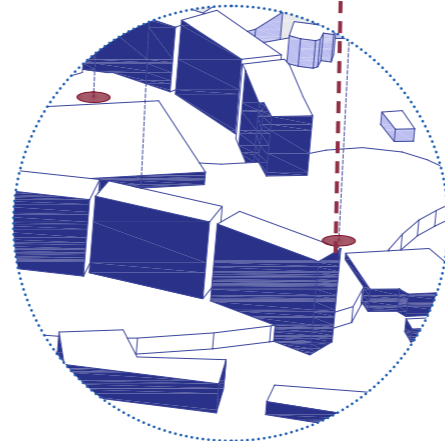
greenery analysis



routes to school analysis



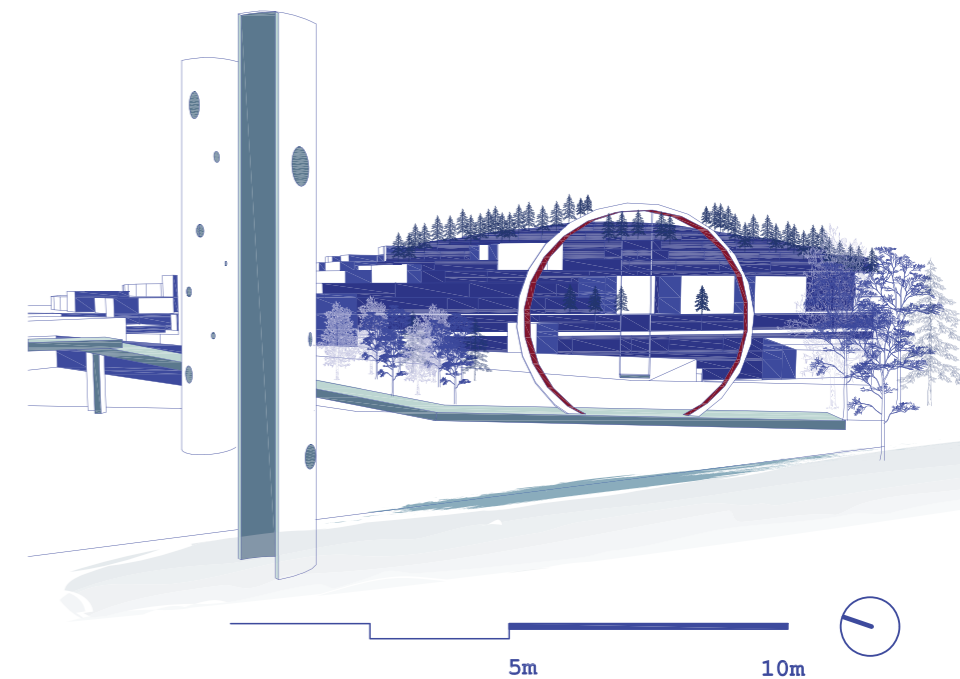
place spaces for kids analysis



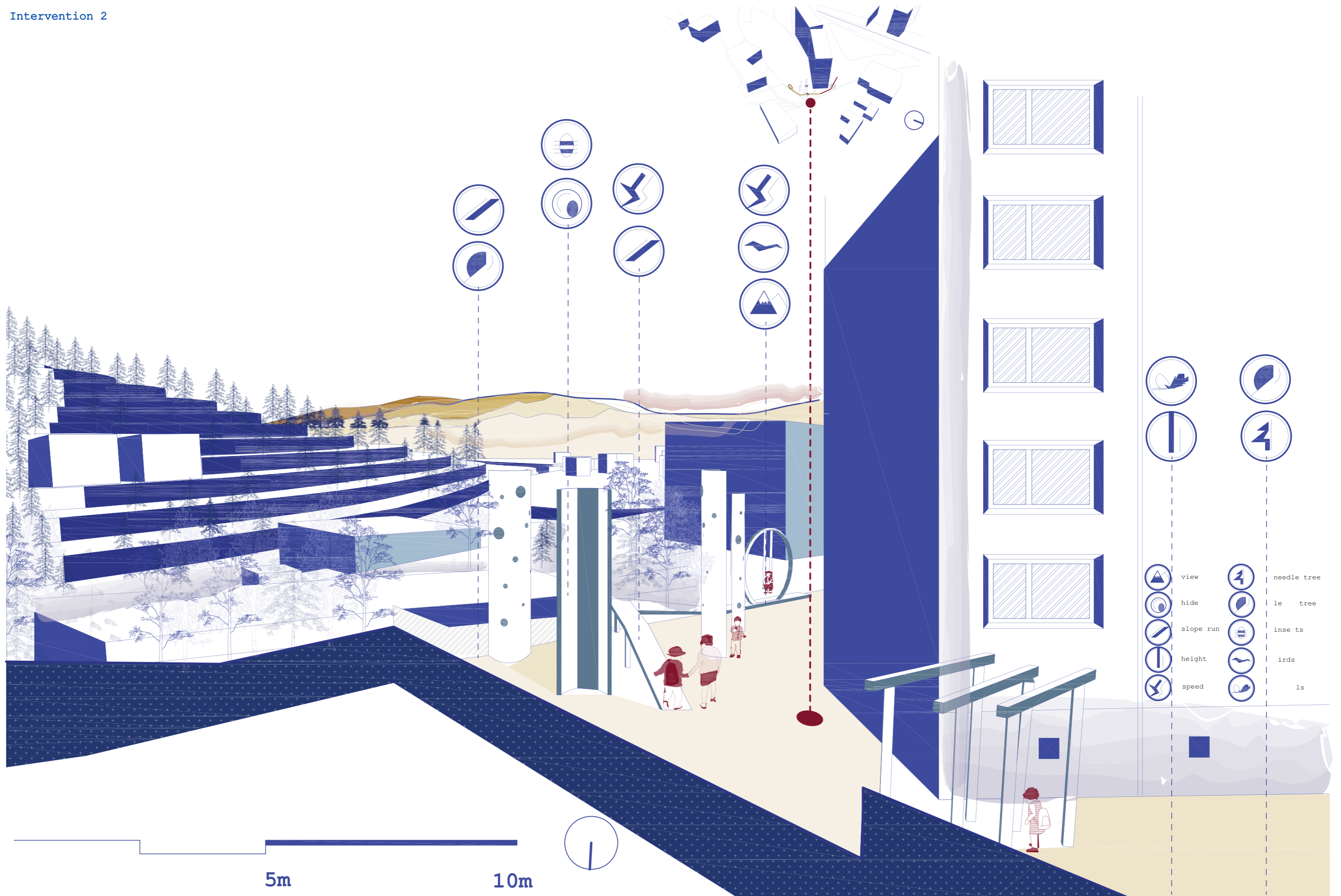
buildings with picked spots

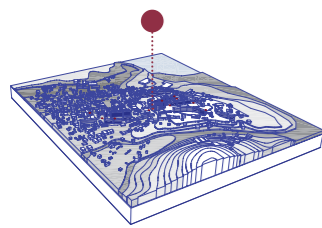


The proposal contains 4 main elements. The first one is a 'gate' which should lead into the play area itself. The second element is a wooden path that undulates with the surface. The third attribute consist of several hollow, curved tubes, which are fantastic for hiding. The final one is a circle with a swing, that articulates and frames the view. Also, it is placed just at the edge of the slope and when swinging, it is possible to feel like flying above an emptiness.

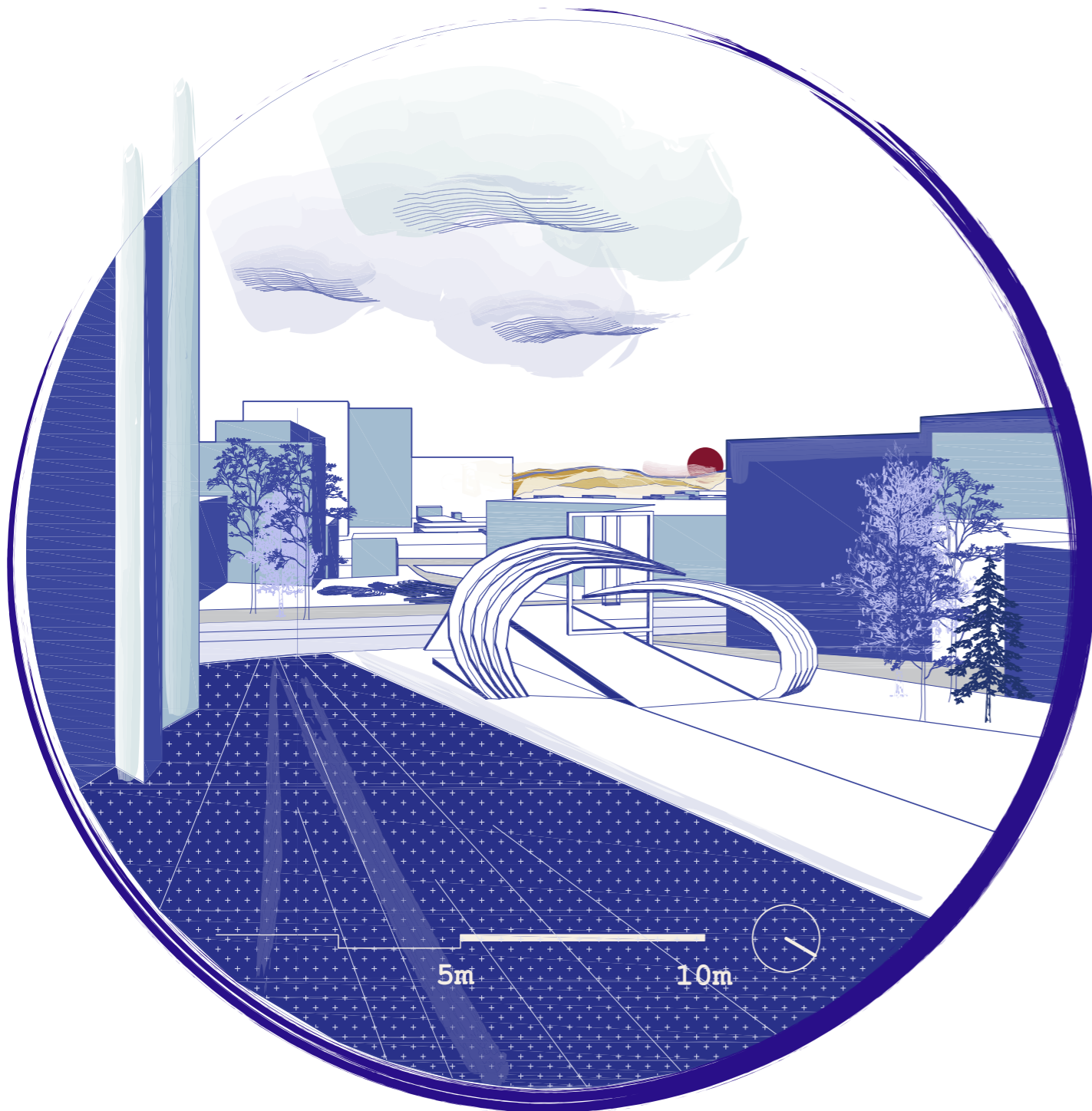


• View from the entrance to the back side



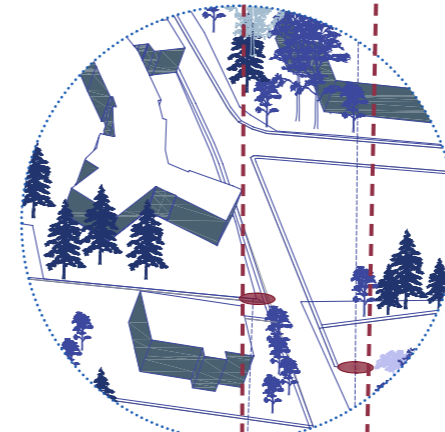


**Intervention 3** The wings above the city intervention is situated nearby the school, as well as on another shortcut path the children use. It is situated on both sides of a road and both of them have unique positioning for the proposal, that attempts to capture the beautiful view of the city center.

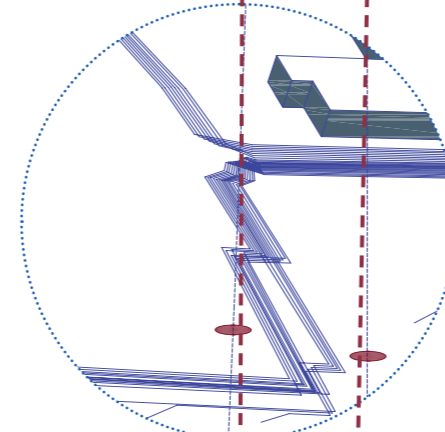


• View to intervention 3

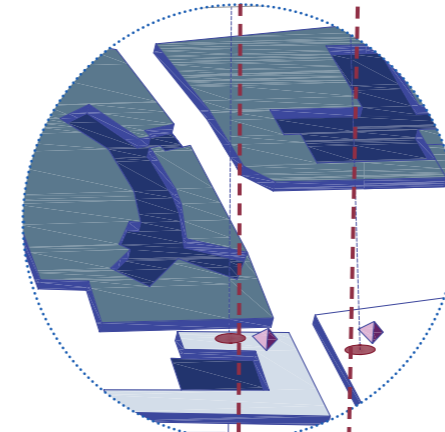
**Intervention 3**



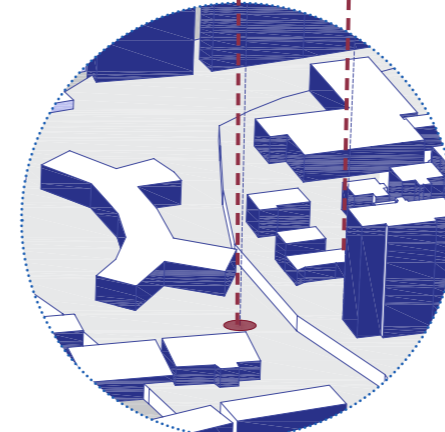
greenery analysis



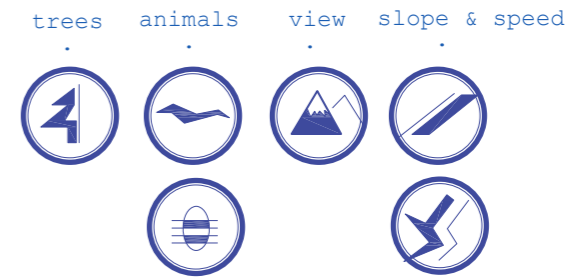
routes to school analysis



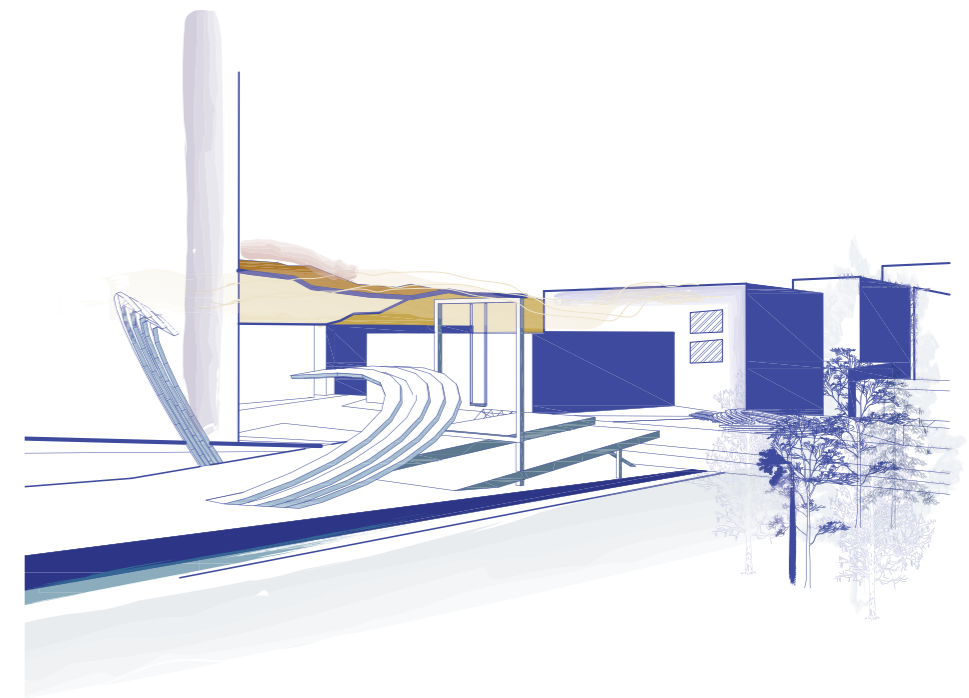
place spaces for kids analysis



buildings with picked spots



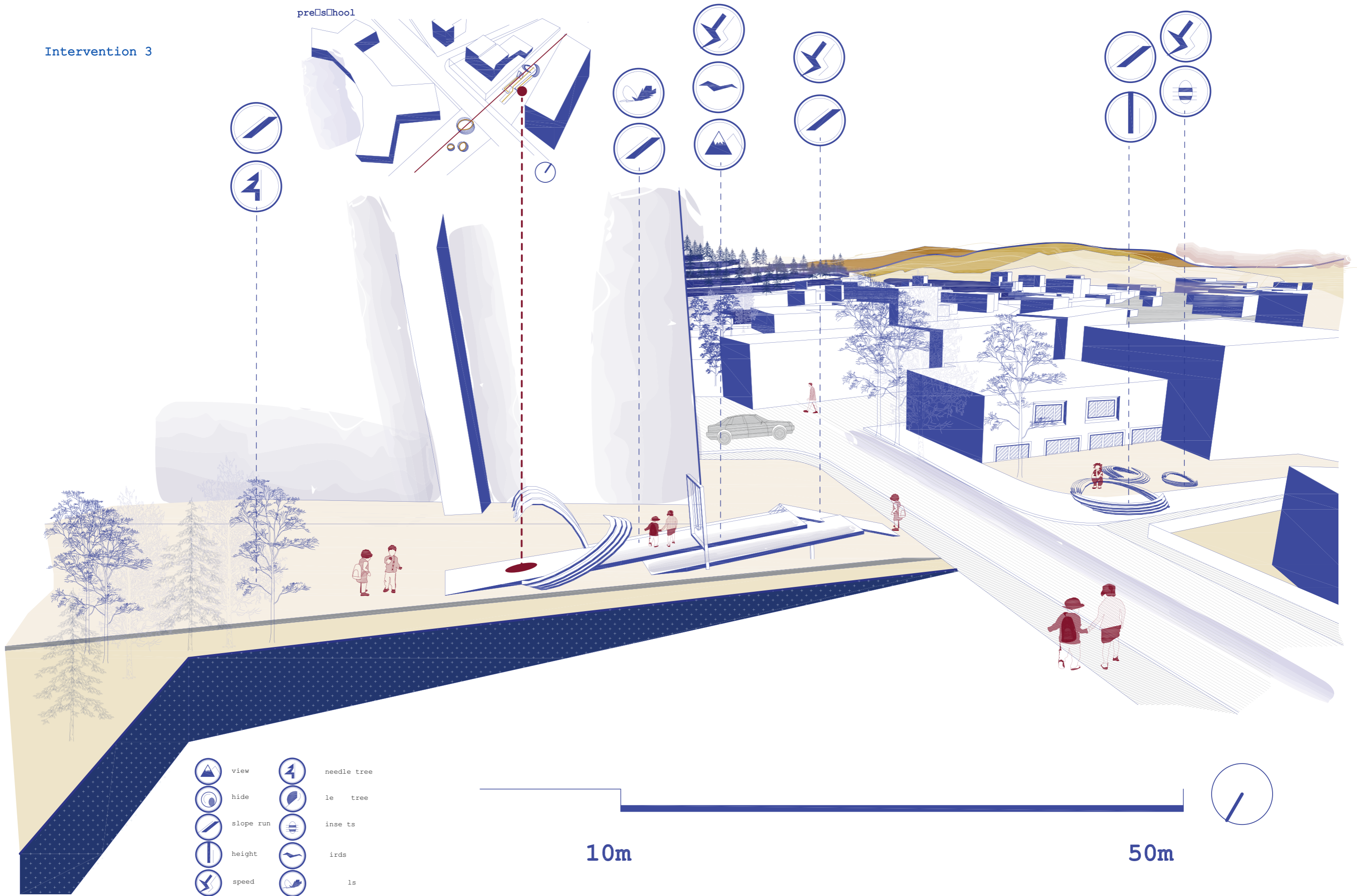
The proposal contains 4 main elements. The first one is the 'wings' which is a beam structure contains line parts on both sides. The second element is a wooden path that prolongs the path surface and then leans towards the pavement. The third attribute is a rectangular frame with a swing that articulates the view to the city and offers the experience of a flight above the city feeling. Just close the eyes and enjoy the fresh morning air before school. The final one is a circular, undulating beam structure that acts as an 'obstacle' on the way and continues to a wooden platform that follows the current shortcut path behind buildings.



• View from the path to road, leading to school

Intervention 3

pre school



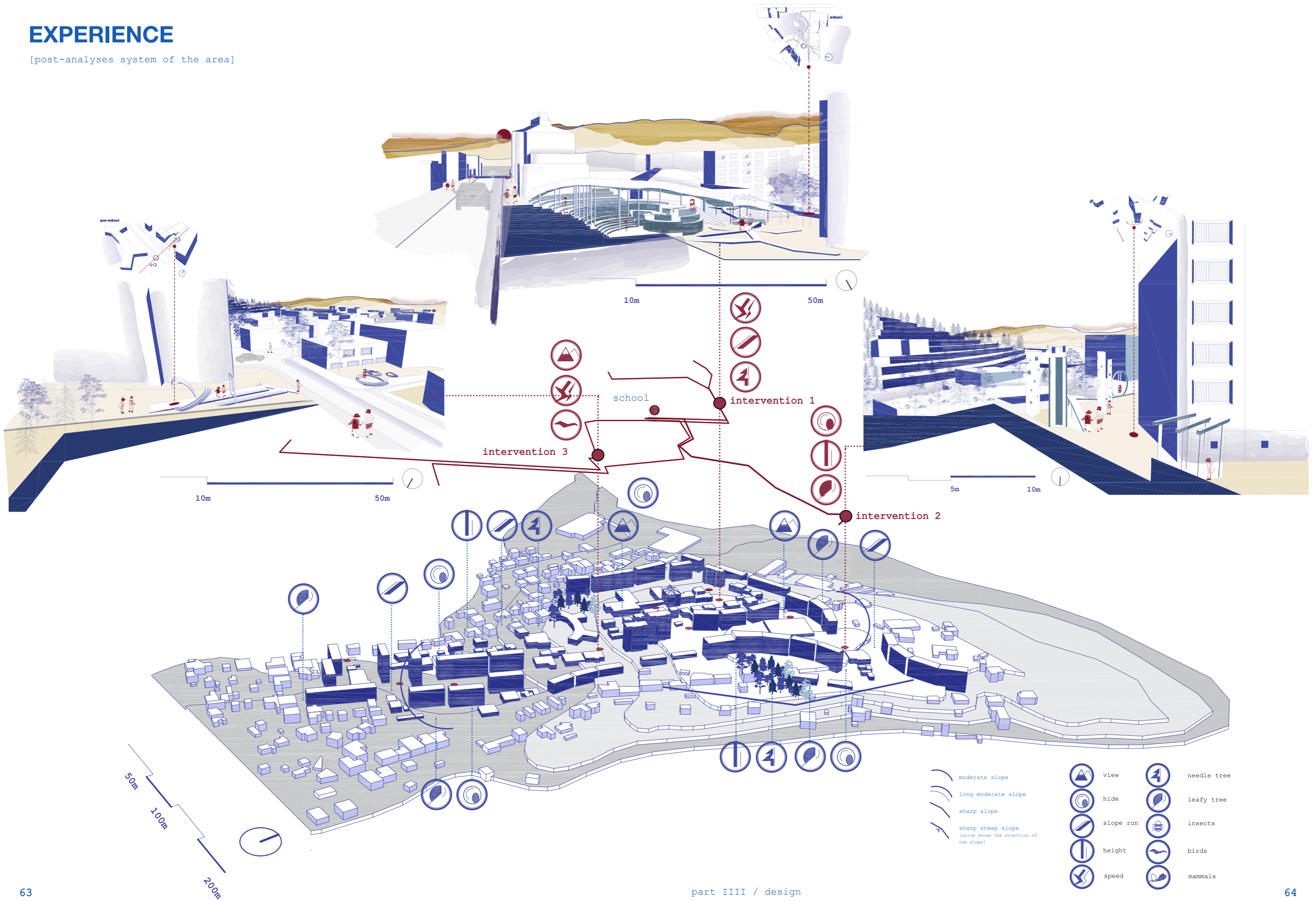
- |  |           |  |             |
|--|-----------|--|-------------|
|  | view      |  | needle tree |
|  | hide      |  | leaf tree   |
|  | slope run |  | insects     |
|  | height    |  | birds       |
|  | speed     |  | hands       |

10m

50m

# EXPERIENCE

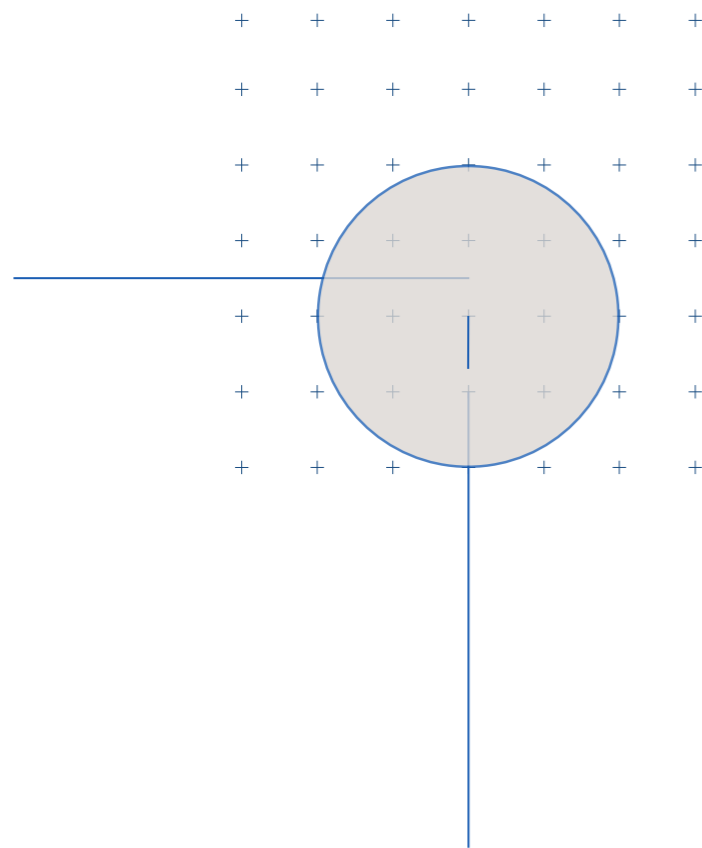
[post-analysis system of the area]





## CONCLUSION

Is it possible to attract children to spend more time outside playing?



## REFLECTION

During the past few years of studying various subjects within architecture, I realized that I always come back to two main aspects that are, from my point of view, important to achieve a sustainable solution of a project. The first one is a matter of awareness and education for children as crucial part for leading society towards brighter future. The second one is the importance of public space, seen as a land of none and everyone, filled with diversity and unity at the same time. The thesis was based on a combination of exactly these two important factors for me.

The project itself is placed into a context, that is familiar and very personal for me. Last year, I was working in Göteborg's housing estate and my childhood times were vividly recalled to me, since I grew up at a similar housing estate. By sinking into the problematic, I have started to see aspects of the topic through diverse attitudes and linking them into one coherent picture, that formulates the thesis scope.

The intention of the project was to [re]include children to be a 'present party' of public space [again]. I built this aim around the context and daily habits of children to achieve this goal and by designing several public spaces and translating them into a lively place that unifies the community life and enhances the natural environment potential. The idea was to give the spots, that were articulated from analyses and observations of the area, a new identity or rather lift the already existing ones and help children to see the quality of it and use the outdoor space more, for 'free play'.

By studying various concepts and examples, I learned that good quality public place can bring people closer to each other and that even a small change, such placing a bench on a right place, can trigger new initiatives or start dialog between people that would otherwise have never met.

Overall, I have really enjoyed the whole process. How I was able to reveal new topics and connections slowly, but constantly and always learned something new. The most valuable part for me was, that I understand the current situation of housing estates in my country in a better way and I can see new possibilities to approach this topic.

## DISCUSSION

The thesis question has been answered rather by raising new questions, like: Would the interventions have a long term effect? Would be the places suitable to support the inter-age relations? Would children feel save enough to play freely? & etc. The possibility that the proposed places would work, the way that they are designed, is quite high. Still, it would be the time that would test them and show the results for the future.

For next step, I think that it would be necessary to start an open dialog with the inhabitants, preferably with all age groups, as well as with the city council to see their opinions regarding the topic. Also, the urban typology of housing estates is very specific, in a good way, but in a bad too. Not just because it is not very stimulating space, but also because of the common bad feeling connected with it. Over years people created certain presumptions about the estates, which could be hard to tear apart. But it should be next, even though, challenging step.

The thesis' endeavor was to focus on children living in the housing estate, as a potential future inhabitant. The aim is that if they gain an emotional bond and positive feeling about the space around them, they probably will tend more likely to live there in the future. It could help out with the current trend of people moving out from the city to live in a countryside.

When I was studying and observing people in the estate, it led me to feel not very welcome. I did not feel a presence of life neither any inviting elements in the outdoor spaces. And even though the houses were full of people, it was not possible to see many outside. Without people, there is no urban public life and the thesis tries to target exactly this problem -by focusing on children, because they bring positivity & free spirit to places. Besides, they draw the attention of other people.

To conclude, the thesis project made me think about things from different angles and reconsider a role of an architect as more of an interpreter of different languages of diverse aspects, people and scales, that in the end has to merge into one coherent functioning system.

All journeys once must end and I  
keep asking where and when?  
Then I wonder, does it matter?  
No, wait, way much better!  
A new path occurs right away and  
life keeps rolling, till the end.

[the author, N.Ž.]



# REFERENCES

[figures by numbers; literature alfabetically]

## figures

**01**| Playing children in Hammarkullen 1970s  
retrieved from book: 6 **Jensen**, J.S. (1974). Hammarkullen: text och bild. Helsingborg: Fyra förläggare

**02**| Playing children in Hammarkullen 1970s  
retrieved from book: 6 **Jensen**, J.S. (1974). Hammarkullen: text och bild. Helsingborg: Fyra förläggare

**03**| Playing children in Hammarkullen 1970s  
retrieved from book: 6 **Jensen**, J.S. (1974). Hammarkullen: text och bild. Helsingborg: Fyra förläggare

**04**| Playing child, John Bridgeman, 1960.  
http://www.play-scapes.com/play-history/mid-century-modern/play-in-museums-john-bridgeman-and-simon-and-tom-bloor-at-leamington-spa-art-gallery-museum-leamington-spa-uk/?utm\_source=rss&utm\_medium=rss&utm\_campaign=play-in-museums-john-bridgeman-and-simon-and-tom-bloor-at-leamington-spa-art-gallery-museum-leamington-spa-uk [2020-04-03]

**05**| Photo of a child in Hammarkullen 1974.  
Photo from a book Hammarkullen by Jens Jensen, 1974.  
https://leidiniu.archfondas.lt/en/alf-02/c-claes-caldenby-urban-modernity-nordic-baltic-experiences [retrieved 2020-02-12]

**06**|Photo of Sidliště Šumava by Ota Bartovský  
Retrieved from https://www.idnes.cz/liberec/zpravy/obnova-sidliste-sumava-jablonec-nad-nisou.A160930\_140003\_liberec-zpravy\_tm [2020-02-18]

**07**|Photo of Hammarkullen 1972  
Retrieved from https://www.gp.se/kultur/kultur/per-arne-ivarsson-det-ta-%C3%A4r-m%C3%A4nksligt-sett-inte-god-arkitektur-1.807725 [2019-12-20]

**08**| Hammarkullen [below] & Jablonec [above] 2020.  
Photos from author’s photo archive.

**09**|Šumava housing estate in early 1970s  
Retrieved from http://www.30rocku.cz/cs/udalo-se/panelova-sidliste-zastroeno-na-jablonce-cast-1.html [2020-02-18]

**10**|Shopping zone in Hammarkullen in early 1970s  
Retrieved from https://leidiniu.archfondas.lt/en/alf-02/c-claes-caldenby-urban-modernity-nordic-baltic-experiences [2020-02-12]

**11**|Photo of view on Jablonec’s dam, 1997.  
Retrieved from http://dlabanek.blog.cz/galerie/obrazky/fotky-jablonec-nad-nisou/jablonec-nad-nisou-2# [2020-03-16]

**12**|Photo of view from Jablonec’s square.  
Retrieved from http://dlabanek.blog.cz/galerie/obrazky/fotky-jablonec-nad-nisou/jablonec-nad-nisou-2# [2020-03-16]

**13**|Photo of view on Jablonec  
Retrieved from http://dlabanek.blog.cz/galerie/obrazky/fotky-jablonec-nad-nisou/jablonec-nad-nisou-2# [2020-03-16]

**14**|6 Photos of Šumava estate photo archive; from 1940s & 1970s.  
Retrieved from http://dlabanek.blog.cz/galerie/obrazky/fotky-jablonec-nad-nisou/jablonec-nad-nisou-2# [2020-03-16]

**15**| Photos of play ‘cages’, 2020.  
Photos from author’s photo archive.

**16**| Photos of play in greenery, 2020.  
Photos from author’s photo archive.

**17**| Photo of waiting children at school, 2020.  
Photos from author’s photo archive.

**18**| Climbing child, Nishirokugo Koen (Tire Park), Tokyo. Solomon9, 2013.

**19**|Play after 1945.  
Retrieved from https://www.iwm.org.uk/history/growing-up-in-the-second-world-war

**20**| Aldo van Eyck, Amsterdame city archive  
Retrieved from http://socks-studio.com/2018/02/11/human-structures-and-architectural-archetypes-aldo-van-eycks-play-grounds-1947-1978/

**21**| Play nowadays.  
Retrieved from **1** https://www.psychologytoday.com/nz/blog/freedom-learn/201806/how-we-deprive-children-the-physical-activity-they-need; **2** https://www.theatlantic.com/health/archive/2011/10/all-work-and-no-play-why-your-kids-are-more-anxious-depressed/246422/

**22**| Photos of Jizera mountains over year.  
Photos from author’s photo archive.

**23**| Floral fractal  
Retrieved from https://floweronly.tumblr.com/post/97268514608

**24**| Photos of trees & lichen.  
Photos from author’s photo archive & retrieved from

**25**| Isamu Noguchi.Slide Mantra, the American Pavilion of the 1986 Venice Biennale Photo: Shiego Anzai.  
retrieved from artical: 9 **Larrivee**, S. D., (2011). Playscapes: Isamu Noguchi’s Designs for Play, Public Art Dialogue, 1:01, 53-80.  
Retrieved from https://doi.org/10.1080/21502552.2011.536711

**26**| Playscapes, Piedmont Park, Atlanta, 1975–1976, Isamu Noguchi  
retrieved from https://www.hermanmiller.com/stories/why-magazine/the-story-behind-isamu-noguchis-playscapes-in-atlanta/

**27**| Aldo van Eyck’s playground; Buskenblaserstraat; Amsterdam. [Courtesy of the Amsterdam City Archive]  
retrieved from article: 12 **Withagen**, R., **Caljouw** S.R. (2017). Aldo van Eyck’s Playgrounds: Aesthetics, Affordances, and Creativity. *Frontiers in Psychology*. 8:1130.  
Retrieved from https://doi.org/10.3389/fpsyg.2017.01130

**28**| Isamu Noguchi. Detail of model for Playground for Kodomo No Kuni, Yokahama, Japan. 1965–1966.  
retrieved from artical: 9 **Larrivee**, S. D., (2011). Playscapes: Isamu Noguchi’s Designs for Play, Public Art Dialogue, 1:01, 53-80.  
Retrieved from https://doi.org/10.1080/21502552.2011.536711

**29**| Sculpture for play, Olbram Zoubek & Eva Klemenťová, 1961, Stromovka, Prague  
retrieved from https://ct24.ceskatelevize.cz/regiony/2255899-atrakce-pro-deti-i-galerie-vytvarneho-umeni-hriste-s-plastikami-olbrama-zoubka-je

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## literature

**1\_Bishop**, K., **Corkery**, L.(2017).  
Designing cities with children and young people, Beyond Playgrounds and Skateparks. New Yourk & Oxon: Taylor and Francis

**2\_Caldenby**, C. (2010).  
From Cradle to Grave Living and Dying in the Urban Modernity. Nordic-Baltic experiences. do.co.mo.mo

**3\_Crowley**, D. (2013).  
The Fate of the Last Generation of Ultra-Modernist Buildings in Eastern Europe Under Communist Rule, Tyrimą finansavo Lietuvos mokslo taryba. Sutarties Nr. MIP-099/2013

Retrieved from https://leidiniu.archfondas.lt/en/alf-02/da-vid-crowley-fate-last-generation-ultra-modernist-buildings-eastern-europe-under-communist-r [2020-02-18]

**4\_Engemanna**, K., **Pedersen**, C. B., **Argef**, L., **Tsirogiannisf**, C., **Bo Mortensen** P., **Svenninga** J-Ch. (2019).  
Residential green space in childhood is associated with lower risk of psychiatric disorders from adolescence into adulthood.

Retrieved from https://www.pnas.org/content/116/11/5188

**5\_Giannakopoulos**, P., (2015).  
Exploring Biophilic Design In Student Accommodation (Licentiate thesis). Chalmers University of Technology, Göteborg.

**6\_IWM Staff**, (2018).  
*Growing Up In The Second World War*  
Retrieved from https://www.iwm.org.uk/history/growing-up-in-the-second-world-war

**7\_Jensen**, J.S. (1974).  
Hammarkullen: text och bild. Helsingborg: Fyra förläggare

**8\_Karous**, P. (2010).  
Aliens and herons, Plastic art in public areas in the 1970s and the1980s in Czechoslovakia,  
Retrieved from http://www.vetrelciavolvky.cz/en/about-project [2020-03-14]

**9\_Kellert**, S. R. (2012).  
Birthright: People and Nature in the Modern World. New Haven & London: Yale University Press  
Retrieved from https://www.dawsonera-com.proxy.lib.chalmers.se/readonline/9780300188943 [2020-03-14]

**10\_Lynch**, K. (1960).  
The image of the city. Cambridge, Massachusetts: The M.I.T. Press

**11\_Larrivee**, S. D., (2011).  
Playscapes: Isamu Noguchi’s Designs for Play, Public Art Dialogue, 1:01, 53-80.  
Retrieved from https://doi.org/10.1080/21502552.2011.536711

**12\_Solomon**, S. G. (2014).  
The science of play : How to build playgrounds that enhance children’s development.  
Retrieved from http://ebookcentral.proquest.com [2020-03-13]

**13\_United Nations**. (2016).  
The Sustainable Development Agenda. Habitat III, Quito.  
Retrieved from https://www.un.org/sustainabledevelopment/development-agenda/

**14\_Withagen**, R., **Caljouw** S.R. (2017).  
Aldo van Eyck’s Playgrounds: Aesthetics, Affordances, and Creativity. *Frontiers in Psychology*. 8:1130.  
Retrieved from https://doi.org/10.3389/fpsyg.2017.01130



