LEARNING IN & WITH THE CITY

How to involve children in the planning of schools and use their knowledge in the translation into architecture

→

Children learn everywhere and all the time but need plenty of space to explore and independently learn the ways of the world, playing is learning. In dense urban environments the competition for space is becoming harder and harder and children seldom have a voice in this negotiation. Cities and their planning put very little focus on children and their required space, instead they are happy to confine them to schools, buildings that are often outdated with strict historical typologies and a school yard smaller than most parking lots.

We need to change our perception of children and what they are capable of. Give them a voice in the planning of our cities and in shaping the environment they spend most of their days in - schools. Besides, who said learning is only for children? We are all learning, all the time. It is time we learn from each other and create new landscapes for learning, both for children and adults

A Master Thesis in Architecture
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Content

Introduction

Architecture is in a time of change. It is not changing by itself but it is quite clear our world and society are in a period of complete reconstruction. Some would even claim that the field of architecture is in crisis, no longer sure of its role and authority in the world. Where does that leave us, the young generation of architects in school and training right now, what are we being trained for? It makes it more challenging to develop our own perception of our professional role and the values we want to work according to. Very early on in the preparation of this thesis it was clear to us that we wanted to change the role architects take in the planning process and how they position themselves. We would like to be seen as the translator between user and architecture rather than the facilitator for the client to make the most out of their plot of land.

As a starting point for our thesis we wanted to look at how cities and buildings are planned, or rather not planned, for children. The first thought that comes to mind is that children see our cities from a different eye level and have to overcome larger obstacles in our urban environment. Children (and people in wheelchairs) see walls where adults see windows. They have to jump over the gap from the metro trains onto the platform when we just take a simple step. With more than 50 % of the world's population now living in urban areas, at least 50 %[1] of the world's children also live in cities, often on very little space and with minimal access to greenery or playgrounds.[2] How come there is such little focus on planning for children and their perspective? Not only in our cities but also in the education of architects and urban planners?

Schillerpromenade playground ca 1970, Berlin - Neukölln [1]

Most children spend a large percentage of their day in childcare or school buildings. However, we realised that we knew very little about these buildings or the impact they have on children and their learning, and what role the school has or can have in the community as a whole. Additionally, we were curious about what role the school has or can have in the community as a whole. To further narrow down our research and in the context of the current school crisis in Berlin we decided to focus on the buildings that children spend most of their day in, schools.

Looking up what a standard school building should look like or what the codes, standards and requirements for a school buildings are were not challenging – there is plenty of literature out there. Just like society as a whole has changed drastically over the past 100 years, the requirements on education and the methods for teaching children have too. New pedagogical concepts, going from mass education to focusing on the individual have changed the idea of what a school building should entail. The literature list is as long and as wide as the spectrum of the different concepts in the field. Unfortunately the requirements on school buildings doesn't seem to have kept up the same pace and only in recent years have new recommendations and directives been brought out.

Except for the odd project here and there and an array of renovations, we found very few projects that actually integrated children in the planning process of a new school building. Instead, newly built schools often follow

a set of rules or a building concept that might be 30-50 years old at best. Plenty are forced to push their new educational methods into buildings that were built for schools a century ago.

Berlin is no exception. Currently the city is in a acute school crisis and lacks around 10,000 school spaces until the school year 2024-25. Existing schools have filled up with children to their limits, barrack-looking buildings have been added to cope with the growing number of pupils and older buildings are being refurbished and reopened. The first modular school buildings are already in use but so far this is not enough, the city plans to build 60 schools in the coming years.[3]

Politically, this led to the so-called 'Schulbauoffensive'. Launched in 2017, it allocated money and resources towards building new schools, but also was supposed to make sure they are built up to par with current educational methods. A group of educators, architects and politicians were put together to come up with a new school program, both programatically and architecturally. In 2018 the city launched a competition for schools with modular construction that could be built on numerous sites. Two architecture firms won this competition (one for the a 3-classes-a-year, and one for a 4-classes-a-year sized school).

For us, this is where the city (and our professional field) has gone wrong.

Firstly, even though schools all have to adhere to national standards of education, they all exist in different contexts and communities. They might have different educational directions and requirements for age categories, people with disabilities etc. How can one building type fit all?

Secondly, even though these schools will house many children for many years, few children were asked in the process. The new school model claims that participation is a requirement for newly built schools – the so-called 'Phase 0'. However, just as the name suggests, it takes place only before the actual planning of the school starts. Which in it self isn't wrong but it means the users are not invited to have a conversation about the design and the planning process. They get to say their mind and express their desires only before hand and then its up to the planning architect how they would like to translate the results into architecture. Furthermore, it is not clear to what extent the participational process is supposed to be done. For us it seemed obvious that the users would be asked what they need from their environment – not only beforehand, but also during the planing process. Why would the case of schools be any different? Are children seen as less capable to participate in the process?

Soon we realised we are not only questioning why the user is not asked but also the role as architects in the planning process. The question of who has the right to decide what the city looks and functions like is not new, but with the radical changes currently happening in the society, it is gaining importance once again. If it is debatable that architects and urban planners are the ones to provide the answers and make the decisions, then who is? How can the space, aesthetics and rights to the city be negotiated?

Fuji Kindergarten by Tezuka Architects, Tokyo, Japan [2]
The Red Planet Playground by 100 Architects, Shanghai, China [3]

Can children speak for themselves in this process?

This is were we saw a potential and decided to focus our thesis on the actual process of building schools. Why are kids not asked about the space where they spend so much of their time? How can we actually ask them what they want from that space? What is our role in the process and how can we act as translators, instead of decision-makers. Can we develop tools that can be used for this purpose in different contexts and settings?

It was clear to us that we needed to start by asking children what they want, but we also recognised that we had little knowledge of how to do that. What are the tools and methods used in a participational process and how can we keep them as open to dialog as possible?

First came an extensive research into how children move and learn and on how a participational process can be structured. Afterwards we spent a month conducting workshops and working with children at one of the schools that is supposed to get a new building. It was one of the most interesting and exhausting parts of this thesis but we were amazed at the results and insights that we gained. A school in a vulcano would be really fun, wouldn't it?

The workshops resulted in finding out the children's needs and desires. It was important to us that all these learnings would not just end up in another book, documentation, or thesis – meaning that the children's voices would be left unheard again. Instead, we attempted to translate the results into a tool that can be used for future school planning. The focus being that it could be used in different projects and as a way of asking and translating children's needs and wishes into architecture.

Our result is a process-oriented toolbox that can be used by architects in the process of planning schools and can be changed (or added to) according to the specific context and group. It can be used and reused in the same project, and new ideas and inspirations can come out of it every time. The toolbox also teaches children the complexity of building a school and how the rooms are connected to each other and how the school is connected to its surrounding community.
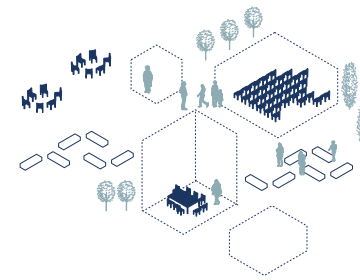
This book will lead you through our research, process and results. We have tried to stay as true to the process as possible and on the next page you can see how we have navigated through all the different aspects and details of this thesis. Our project is just a snippet of time out of an ongoing development over a longer time and we hope that we can have a possitive impact on the further planning process.

We developed the toolbox in close cooperation with the Peter-Petersen-Schule, a Berlin school that kindly let us work with their pupils and conduct planning workshops with them. We are very thankful to them and happy that we could hand them our developed toolbox for the future planning of their new school building.
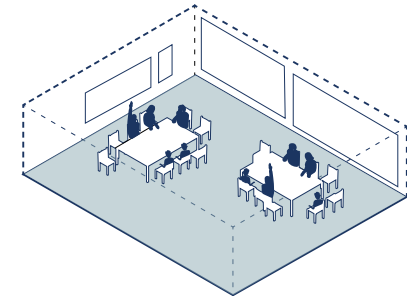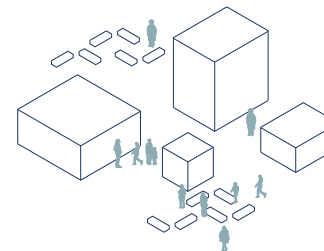
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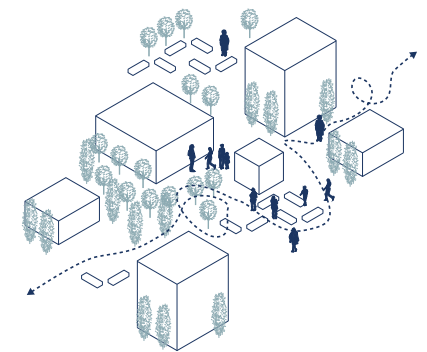
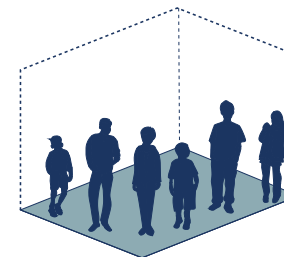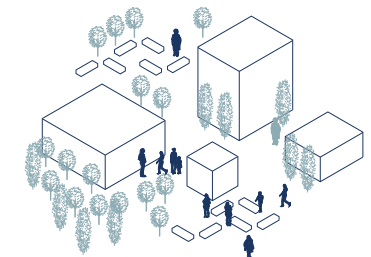### APPROPRIATION OF SPACE

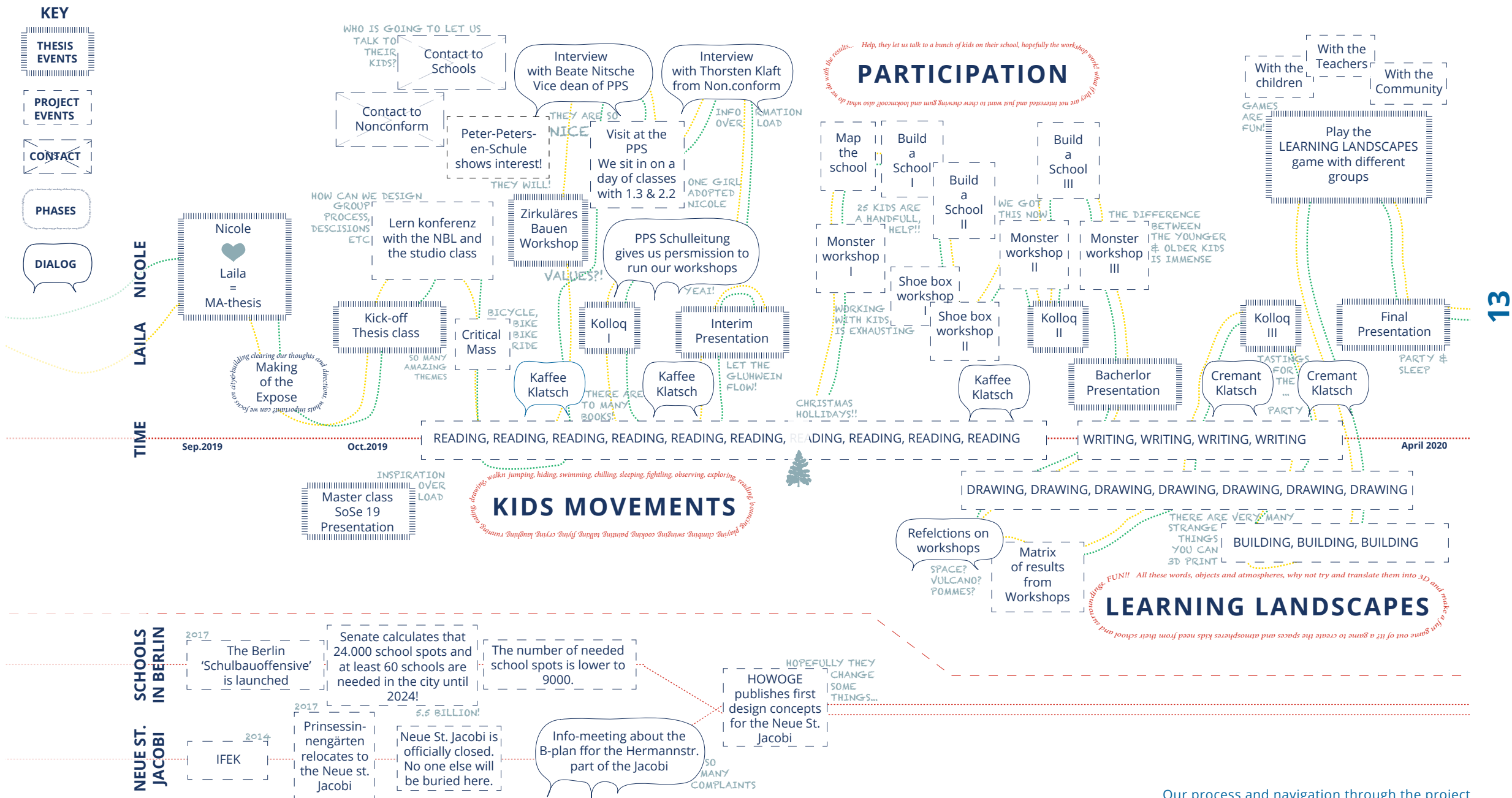### INCLUSION

EYE LEVEL

WALKABILITY & PLAYABILITY

EQUALITY

GREEN URBANITY

Timeline

KEY

- THESIS EVENTS
- PROJECT EVENTS
- CONTACT
- PHASES
- DIALOG

NICOLE
LAILA

Nicole ♥ Laila = MA-thesis

WHO IS GOING TO LET US TALK TO THEIR KIDS?

Contact to Schools

Contact to Nonconform

Interview with Beate Nitsche Vice dean of PPS

Interview with Thorsten Klaft from Non.conform

THEY ARE SO NICE

Peter-Peters-en-Schule shows interest!

Visit at the PPS

We sit in on a day of classes with 1.3 & 2.2

INFORMATION OVER LOAD

ONE GIRL ADOPTED NICOLE

PARTICIPATION

Help, they let us talk to a bunch of kids on their school, hopefully the workshop work! what if they are not interested and just want to chew chewing gum and loohmcool? also what do we do with the results...

With the children
With the Teachers
With the Community

GAMES ARE FUN!

Play the LEARNING LANDSCAPES game with different groups

HOW CAN WE DESIGN GROUP PROCESS, DESCISIONS ETC

Lern konferenz with the NBL and the studio class

Zirkuläres Bauen Workshop

PPS Schulleitung gives us persmission to run our workshops

VALUES?!

Map the school

Build a School

Build a School II

Build a School III

25 KIDS ARE A HANDFULL, HELP!!

WE GOT THIS NOW

THE DIFFERENCE BETWEEN THE YOUNGER & OLDER KIDS IS IMMENSE

Monster workshop I

Monster workshop II

Monster workshop III

WORKING WITH KIDS IS EXHAUSTING

Shoe box workshop

Shoe box workshop II

Kick-off Thesis class

BICYCLE, BIKE, BIKE RIDE

Critical Mass

Kolloq I

Interim Presentation

SO MANY AMAZING THEMES

Kolloq II

Bacherlor Presentation

Kolloq III

Final Presentation

Making of the Expose

space-building clearing our thoughts and directions, what's important can we focus on city-building

YEA!

LET THE GLUHWEIN FLOW!

TASTINGS FOR THE ...

PARTY & SLEEP

Kaffee Klatsch

THERE ARE TO MANY BOOKS!

Kaffee Klatsch

Kaffee Klatsch

Cremant Klatsch

Cremant Klatsch

PARTY

CHRISTMAS HOLLIDAYS!!

TIME

Sep.2019   Oct.2019

READING, READING, READING, READING, READING, READING, READING, READING, READING, READING

WRITING, WRITING, WRITING, WRITING

April 2020

INSPIRATION OVER LOAD

Master class SoSe 19 Presentation

KIDS MOVEMENTS

walkn jumping, hiding, swimming, chilling, sleeping, fightling, observing, exploring, reading, bouncing, playing, climbing, swinging, cooking, painting, talking, flying, crying, laughing, running, sliding, drawing,

DRAWING, DRAWING, DRAWING, DRAWING, DRAWING, DRAWING, DRAWING

THERE ARE VERY MANY STRANGE THINGS YOU CAN 3D PRINT

BUILDING, BUILDING, BUILDING

Refelctions on workshops

Matrix of results from Workshops

SPACE? VULCANO? POMMES?

LEARNING LANDSCAPES

game out of it? a game to create the spaces and atmospheres kids need from their school and surroundings. FUN!! All these words, objects and atmospheres, why not try and translate them into 3D and make a fun

SCHOOLS IN BERLIN

2017

The Berlin 'Schulbauoffensive' is launched

Senate calculates that 24.000 school spots and at least 60 schools are needed in the city until 2024!

The number of needed school spots is lower to 9000.

HOWOGE publishes first design concepts for the Neue St. Jacobi

HOPEFULLY THEY CHANGE SOME THINGS...

NEUE ST. JACOBI

2017

5.5 BILLION!

2014

IFEK

Prinsessin-nengärten relocates to the Neue st. Jacobi

Neue St. Jacobi is officially closed. No one else will be buried here.

Info-meeting about the B-plan ffor the Hermannstr. part of the Jacobi

SO MANY COMPLAINTS

Our process and navigation through the project

Methodology

"You cannot understand a system until you try to change it!"[4]

‐ Kurt Lewin, psychologist

After wondering how the role of the architect can be adapted to a society in constant change, we realised that we needed to find a research method that would allow us to fully understand a social context without interfering or influencing it. Our goal was to understand the desires of a specific community and to transform ourselves into translators of those desires into reality.
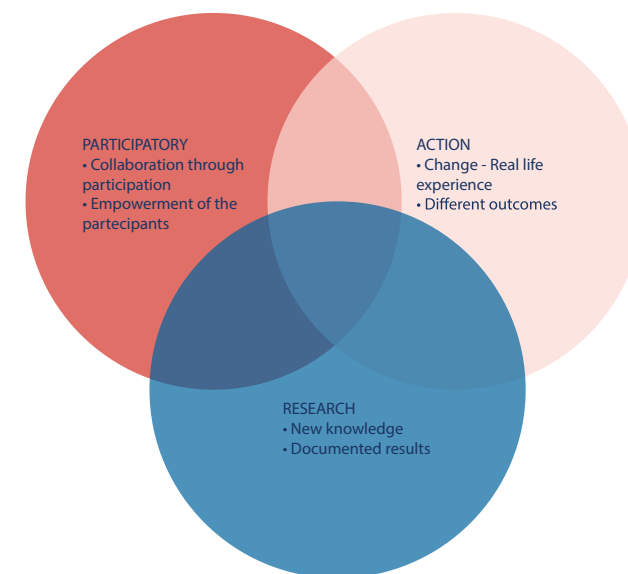
Contrary to what happens in most architectural processes, our intention was to eliminate the concept of architect and client, and to create an exchange of knowledge between architect, client and user on equal terms. We see it as a process of social change in which participants are not passively studied by the researcher but are actively involved in every part of the process in order to improve the life of the community. As citizens, we try to understand the social context under discussion and, as professionals, offer our knowledge to implement it.

It was with these premises that we decided to use the Participatory Action Research (PAR) method for our thesis. The main intention of the PAR method is to achieve social change primarily by trying to fully understand the social context in question and by including all those who are part of it.[5]

The goal of the PAR method is to obtain information that highlights the qualitative characteristics of an individual's emotions, views and opinions without any influence or manipulation by the researcher. It is a method of qualitative research that is contrasted with quantitative research, and as such integrates different approaches and methods to it, such as observation, documentation, analysis and interpretation of human behaviour.

"The purpose of qualitative methodology is to describe and understand, rather than to predict and control". [6]

Therefore, this research method, unlike quantitative research methods, does not accept the presence of a single objective – a scientific, quantitative truth, but rather highlights the presence of different realities based on different circumstances and subjective experiences. Consequently, the obtained results cannot be used to define mass groups of people, but they are rather a subjective study of facts in their natural environment, without interference, focusing on the interpretation given by people. The main values of this method are subjectivity, individualism, relativism and interpretation. Both the researcher and the person belonging to the community participating in this type of research have the opportunity to learn from each other through an exchange of information, emotions and experiences. The aim is to generate knowledge as a fundamental part of the process.

PARTICIPATORY
• Collaboration through participation
• Empowerment of the partecipants

ACTION
• Change - Real life experience
• Different outcomes

RESEARCH
• New knowledge
• Documented results

The Participatory Action Research method with its different phases

Contrary to traditional methods in which a collective reality is sought, PAR attempts to decentralise research and take action to solve a problem. This is done by trying to give participants power and control back over their own reality, while keeping the focus on the local context. PAR is not only research that is followed by action; it is action that is researched, changed, and re-researched within the research process by the participants. Wadsworth's definition of this type of research implies that the process is not linear but iterative. It is necessary to adapt each phase to the needs and the rhythms of the participants.[7]

"The concept that people have a right to determine their own development and recognises the need for local people to participate meaningfully in the process of analysing their own solutions, over which they have (or share, as some would argue) power and control, in order to lead to sustainable development." [8]

- Heidi Attwood, Researcher

It was clear to us that neither a participational process nor a process with children can be linear and have one scientific truth or reality so we found the PAR a fitting method and approach to our project. We wanted to be able to interact and respond to individual feelings desires and opinions and see that input as valuable as our scientific research into children in cities or school systems. It was also important to us that we stayed close to the user (or in our case future users) and gave them a significant role in our project, something this method also emphasises.

Practically we implemented the method in its three sections: we did research on what we found necessary for us and the project, and then went on to conduct participational workshops with the children.

For the research we found it important that we extended our knowledge on topics like children in urban environments, play and its importance for the learning process, the integration of users in the planning of buildings and participation in general. To be able to understand the children and the situation for the Peter-Petersen-Schule we also saw it necessary to do general research on its context and hence analysed the district of Neukölln, schools in Berlin, the current political and educational development around schools and the future school on the cemetery Neue St. Jacobi.

For the participation we took a trial-and-error approach to investigate what methods and tools worked and what effect they had. We tried them in a small scale on one or two children before taking them to the school

The Participatory Action Research method applied to the phases in our process

and the larger groups. As one of our main goals was to learn from the children, the process also encouraged active participation from our side, through listening to, observing and interacting with children in the workshops. These were documented and analysed and led us on to the next part of the project, action. Throughout the hole process it was important to us that we gave something back that could be actively used in the planning process and represented the desires the children had expressed. Translating all the results into a game for the planning of schools seemed like a perfect fit and great tool for us, and the school, to take action in the future.

Our results are described extensively in this book, and the following chapters are divided into the categories of Research, Participation and Action.

RESEARCH

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Children in cities
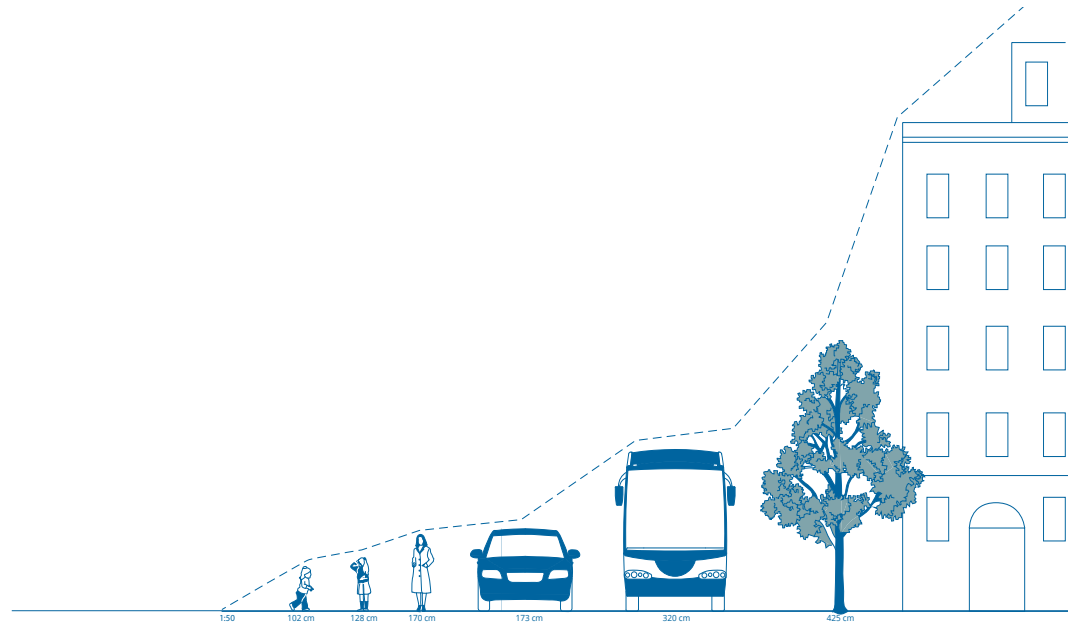
Over 1 billion children live in urban environments today.[10]
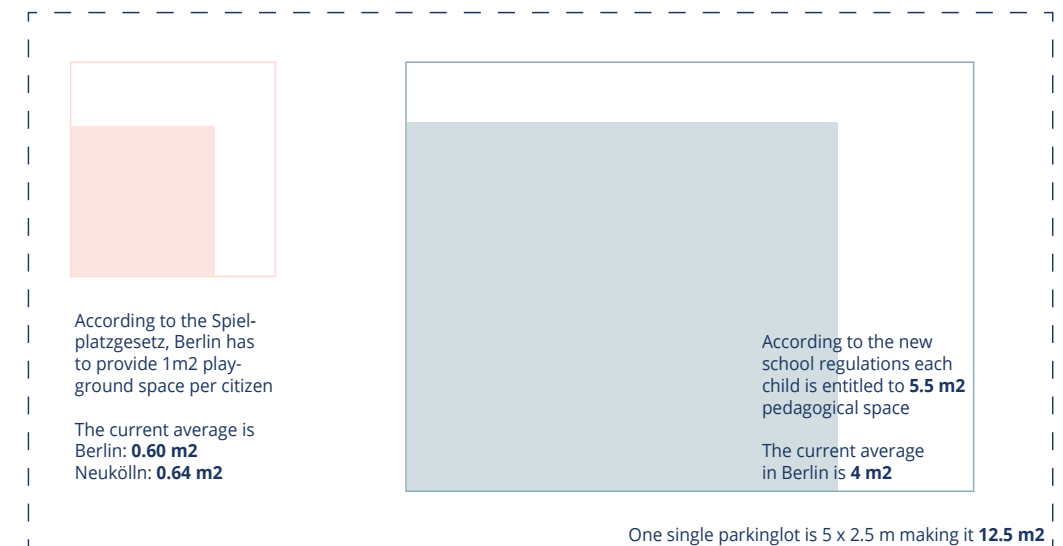
Cities have evolved into a new landscape for learning. Following the trend of global urbanisation, in the years to come, many families will be living in densely populated cities. By 2050, two-thirds of the world's population are expected to live in these urban areas. Berlin is a prime example of such a lively urban landscape being home to almost 3.8 million inhabitants. As this trend shows no sign of slowing down, the city will become a context in which new generations of children will grow up. In order to make cities an ideal place to raise children, we, as a community, need to rethink the way in which schools and neighbourhoods are designed. At the core of this community, architects must play a central role in recognising the shift in the topology and need to work together to rethink the principles and processes with which they design.[9]

Space has never been as scarce a resource as it is now. The greatest challenges cities bring to growing children are directly attributed to living in such high density. This comes at the cost of taking away the vital space that children require to explore, play and think. Fast-paced cities also present many dangers - traffic and congestion on the streets, 'stranger danger', loss of orientation, and innumerable other distractions - which add further dimensions to the problem of safe and nurturing spaces. In response to these issues an increasing trend to rely on technology as a medium for

playing instead of using physical objects in space brings its own set of problems. It seems the natural flow of these developments has inevitably led to the neglect of children's spatial needs. Over the past few decades, we have seen a significant reduction in the amount of time children spend playing outdoors and independently accessing their neighbourhoods. It is essential therefore, that we once more address why space as an integral part of playing is important for a child's growth. [11]

At the most fundamental level, is a child's health and wellbeing. Good use of space in a child-friendly neighbourhood can provide access to nature, the ability to move and play, social connectedness as well as the ability to observe social norms and the opportunity to establish better autonomy and agency over oneself. These have all been shown to positively contribute to health and wellbeing but more importantly these aspects are also linked to the learning process. According to Vanessa Durand: "Children learn by experiencing their world using all of their senses. The restriction of movement, especially at a young age, impedes the experiential learning process." This aligns with a study from the University of Virginia that found, that in comparison to 1998, children are spending far less time on self-directed learning and considerably more time in a passive learning environment. The intersection of play as a tool for learning and the design of space in urban landscapes, points towards the setting of schools and how they can better use playing as a mechanism for learning. First, however, we decided to further explore the notion of play itself.[13]

80% of the teenagers in the world are physically inactive as a result of urbanisation.[12]

According to the Spielplatzgesetz, Berlin has to provide 1m2 playground space per citizen

The current average is
Berlin: **0.60 m2**
Neukölln: **0.64 m2**

According to the new school regulations each child is entitled to **5.5 m2** pedagogical space

The current average in Berlin is **4 m2**

One single parkinglot is 5 x 2.5 m making it **12.5 m2**

Space requirements for different functions in the city

Play

Play is a very broad umbrella term that encompasses a large group of actions that we partake in primarily for the purpose of fun and almost always within a social context. The school playground is a breeding ground for children to develop key social skills such as communication and empathy, perhaps even more valuable than the harder skills gained in class. To better define the scope of play in regards to children it would be necessary to look at what kinds of play there are and how they are important to the development of a child. To make is more comprehendible we have narrowed these down to five main groups of play, they are as follows

- **Active play**: Movement for movement's sake, just because it's fun. Things like chasing, tagging, hide and seek and tree climbing fall into this category.

- **Sensory play**: Allows children to explore, try out new ideas and use their imagination. They can use lots of different items, altering something and making something new.

- **Creative play**: Allows children to explore, try out new ideas and use their imagination. They can use lots of different items, altering something and making something new.

- **Social play**: Any social or interactive situation where the expectation is that everyone will follow the set rules - like during a game, sports or while making something together.

- **Reflective play**: Time spent sitting quietly or doing nothing. Resting, thinking or just staring into space. Time apart from hectic environments to reflect and regroup.

These types of play are not mutually exclusive but are capable of intersecting. In fact, one playtime can include many different play types and it is part of our task as architects to provide spaces that are able to effectively combine them. We will return to these concepts and their role in designing schools and neighbourhoods later in the book.[15]

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DESIGN OPPORTUNITIES TO PLAY

ACTIVE
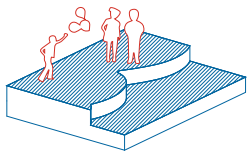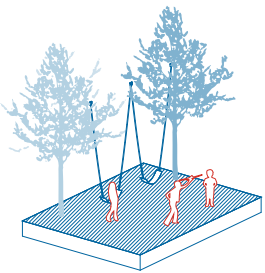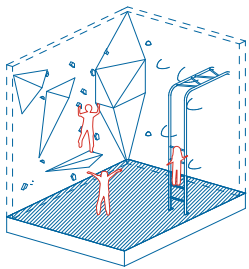
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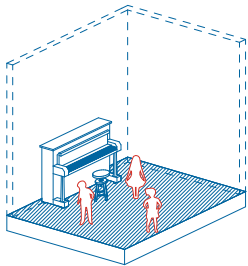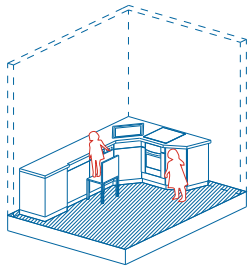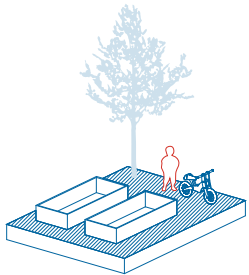
CREATIVE
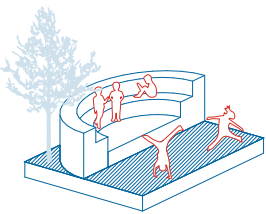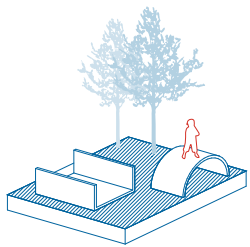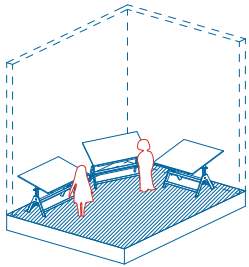
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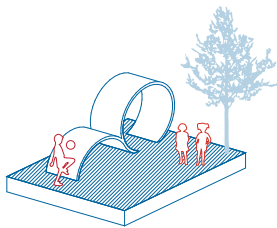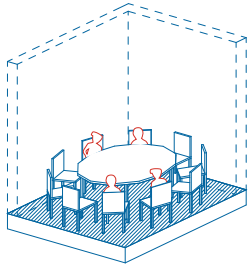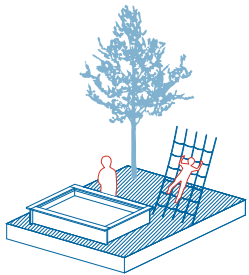
REFLECTIVE
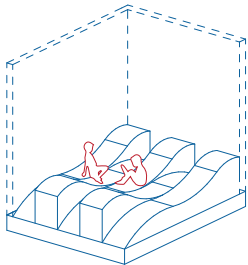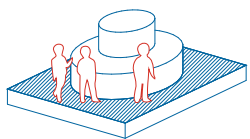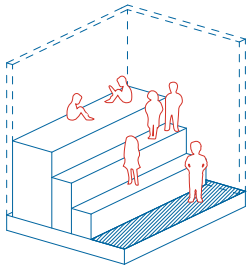
Different types of play in their respective category

Interactive playground by Carve in Amsterdam [4]
Part of the project 'The City of Children' a worldwide network fo make cities more playable [5]
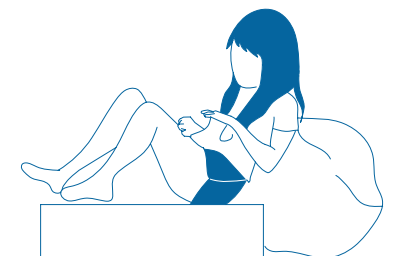
Conclusion

Having now outlined the importance that architects have in developing the space for children to grow in, it is also important to recognise some of the challenges that architects face. Given the pace of human advancement, both technological but also socially, the dilemma that architects face in building long-lasting static and sustainable structures become obvious. Buildings have to be capable of adapting to the dynamic context which they are used for; else the buildings and the spaces risk becoming unsuitable for the schooling system that uses it.

Compounding this issue is the desire for spaces in dense cities to be better utilised and therefore multifunctional. This requires a greater awareness and understanding from the architects themselves in regards to the needs of all the users. It is also perhaps easier to design a space for passive learning activities like being seated and silent, but how do we design a space that readily accommodates learning by playing, by moving both chaotically and freely and without a defined planned result or relying on the same output for every child. As Valerie Strauss from the Washington Post describes it: "Movement isn't a break from learning, Movement is learning." And because of this, architects play a much more pivotal role than previously.
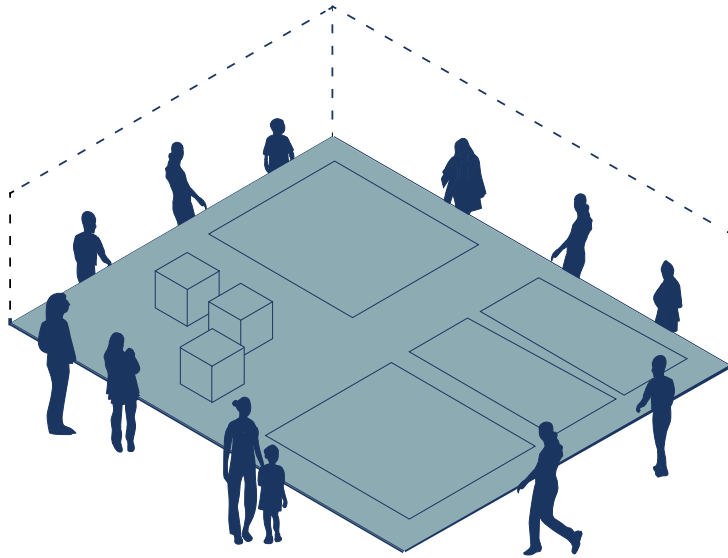
"if children are not designed into our cities, they are designed out. this means that they are deprived of contact with the material world, with nature, with civic life and with their own capacities" [16]

- George Monbiot, writer

The shape of architects' influence on the growth of children is two-fold. An architect can design spaces that foster exploration and play and hence interacts directly with the child's development. This is important for agency, independence and self-discovery. But this style of learning is also balanced with the more closely guided and nurturing learning style. Remember, children, although the primary focus, are not the only actors in a school. By designing the spaces by keeping in mind how teachers use the space as a tool we can open up the doors to the many approaches that the teachers themselves can use for child development and so therefore architects also have an indirect influence. This highlights the need to delve deeper into the school systems themselves.[17]

Participation

the authority of the users, with planners trying to find a way to give the affected users advocacy. The total lack of interest for social issues in the modern movement and the elitist notion of architects served as a backdrop to the growing interest and use of participation in different manners. The movement started in urban planning but soon applied itself to architecture and actual buildings.[19]

In Berkley a group of architects and planners founded the Design Methods Movements which tried to find ways to integrate users in the design process and to make it transparent to them. In their opinion an objective, methodical way to design would make the process more transparent and easier to understand. They have later been criticised for being too objective and that a purely methodical way of designing doesn't guarantee a proper participation for the user.[20]

The following years and decades provided different forms and processes for participation, one of the members of Design Methods Movement, Christopher Alexander, wrote a book with condensed arguments and considerations that architects normally would use to supply the user with enough information so that they could conduct some of the design process themselves. Lucien Kroll did something similar when he designed a toolbox which supplies the basic structure and technical equipment but leaves the designing up to the user.[21]

Participation - the action of taking part or becoming involved in something.[18]

In the field of architecture and planning the term participation is used to describe the process in which individuals, groups and organisations are consulted about or have the opportunity to become actively involved in a project or program of activity.

Participation and its beginnings

For a long time the planning of cities and buildings were left to the experts and the decisions were made behind closed doors, without any information reaching users and residents. Architects and planners together with politicians and the nontransparent bureaucracy could decide what to develop and what to demolish in cities. A small number of people in control of our cities and its development.

With the financial upswing in the 1960s and the spirit of modernism many cities went through large development schemes. In many of these projects poorer neighbourhoods were demolished to make way for larger dwellings and the residents were merely informed about these developments once they were decided on. The 60s was not only the decade of financial boom but also of the time where the quest for equality became a large part of society and communities, especially for minorities. Participation was promoted as a way to achieve a just society and by recognising

Byker Wall, residential housing by Ralph Erskine, 1970s, Newscaslte upon Tyne, England [6]

These systems reduce the profession of the architect to the one that develops structurally sound and technically effective building systems and the user is the one to fill it. The problem with this type of system is that the requirements and parameters are set by the architect and the user often lacks the experience or expertise to know how to construct the wished atmospheres and spaces within these parameters. Here you could be quick to argue about the role of the architect and to what extent we as professionals need to or would like to intervene in these development processes. Is there a middle ground where the architect is still needed but needs to stay in constant communication with the user? This is a question architects still ask themselves and the answers are often based on individual values and beliefs.[22]

Traditionally the architect was close to people and the user for whom they worked with or for. In the course of becoming a more academic profession, architects have removed themselves from everyday life and the user, instead putting themselves on the side of the client and commissioner, making architecture a service to the one holding the money and not to society at large. De Carlo, one of the most prominent theorists of the last half of the 20th century, argues that if the architect were to change sides the users' forced passivity would be lifted but it's important to remember that users' wishes have to be seen as equal as to the ideals of the architects. Participation is seen as a collective activity and the architect is not to plan for the user but with the user. Planning and building has to become a process that keeps repeating itself in a cycle and during this process the aims and goals for the building will become clear. This view is reinforced by Jeremy Tills' work, some 40 years after De Carlo, he also argues that participation is a cyclical process with the user.[23]

EINE ANDERE GESCHICHTE DER BEWOHNER EINES ANDEREN NEUEN STADTVIERTELS

JEDER VON UNS HATTE SEINE EIGENE VORSTELLUNG VON SEINEM ZUHAUSE

DER DURCHSCHNITTS MANN

ABER UNSER ARCHITEKT HÖRTE UNS NICHT EINMAL ZU: ER HAT STUDIERT, WIE SICH DER „DURCHSCHNITTSMENSCH" VERHÄLT

Jona Friedman, from *Meine Fibel* [8]

Student housing built with participation by Lucien Kroll, 1976, Brussels [7]

Participation Today

Today loud voices for participation, including Jeremy Till, see many problems in the fact that it has become a bit of a fashionable word. Just like 'sustainability' - participation is used widely and without a proper definition, it is accepted uncritically and without questioning what it actually means. Even though participation is mandatory in most (European) public planning processes today, it often becomes a way to appease the public and it will often stop at the notion of letting some users take part instead of being the catalyst for a real transformation process. The chosen methods often end up being organised and steered in one direction, which doesn't leave the conversation open and essentially still does not give the user their full voice and advocacy. It is conducted and completed before the planning starts and even though the results are then involved in the brief, the user is never part of the actual planning process, which stays linear. [24]

With the increasing modernisation, people are in general further removed from decision making and these procedures are masked behind layer upon layer of bureaucracy and specialists' opinions. Architectural building processes are no different and the architect, becoming more and more of a specialist and with their own specific set of values and expectations, is removed, and thus removing themselves from the general public.

Pop-up studio conducting a participation-based research and design project, Cloud architects, London [9]
Making Futures school, a two-week workshop in the Haus der Statistik by Raumlabor, Berlin [10]

Like most experts, these expectations often differ from the general public and hence the gap between the built world and the one that is actually needed and desired is growing wider and wider.[25]

In a world where people are further and further removed from being involved but also understanding the decisions (political, social, built etc), made for them and their surroundings, participation is increasingly necessary, even though it's becoming increasingly more complicated. Citizens that feel a sense of belonging to the world in which they live will get involved with the community and the space, and they will have a sense of responsibility for it.[26]

So how can real participation be facilitated? And why are architects so reluctant to do so? Architects have for a long time been trained to work with the ideal and are used to a methodology that solves problems in a neat and linear way. Participation stirs architects out of their comfort zone and makes the planning process uncertain and unpredictable, users seldom share some of the very specific interests or values of architects (most users don't care if the door handle is in coherent design with the building if the door is constantly locked). At the same time, participational projects from the 60s and 70s show that when the architect only supplies the basic structure, the needs and desires of the user are still not heard because most people are not educated to express them in a spatial way.[27]

This means that for participation to be truly equal the architect can not impose their expertise on the user but also can not withdraw from the design process completely. A golden middle has to be found where users and architects can at an equal level "confront themselves and each other as particular and as universal".[29] Participation can awaken general awareness for the problems in the city or a space but it can also show that change through citizens is possible. Architects can be the facilitators of this awareness. Sustainability, whether social or environmental, creates a stronger social acceptance for architecture.[30]

"In transformative participation, it is not a matter of attempting to find a consensus among competing positions, but of using one's judgment to make best sense of them. This inevitably leads to the acceptance of difference rather than the imposition of a false equality, even if this might grate with accepted liberal norms of participation, in which the search for a solution acceptable to all is paramount." [28]

- Jeremy Till, architect
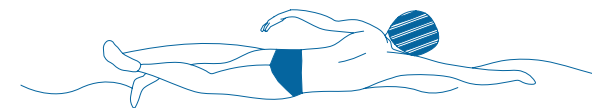
Participation according to Baupiloten

Susanne Hoffmann and her Berlin-based firm Die Baupiloten who have worked intensively with participation, especially for the renovations of schools and kindergartens. Today they are one of the main Berlin-firms commissioned to conduct participational processes for new schools being built in the city.[31]

According to Hofmann, the atmosphere is as important as the design and construction of a building. The atmosphere has a direct impact on us and something everyone can feel or sense. Atmosphere is vague and hard to grab but offers space for uncertainties in the design which brings in a contingence to the process and space for the architect to work with the user. The user might not be familiar with plans and sections but talking about the sensory experience that architecture has can be a way to communicate with the architect, a way for the user to express their own ideas and visions.

"The participational design is not a linear process, where problem solving is essential but it is a process of intensive and complex communication and insights for both sides."[32]

- Susanne Hofmann, architect

If you assume that the sustainable usage and the users identification with the building is important, they have to have an essential role in the planning of it. The practical and sensorial knowledge of the space and building that the user has is an essential source to the architect in the planning of a new building or area. Unfortunately the process to work with users is very seldom part of the planning and designing process and not covered

Children working on their projects in our workshops

Kindergarten Taka Tuka Land by Baupiloten, Berlin [11]

in most contracts between client and architect. In Germany the so-called Phase 0 is instead becoming widely accepted and used, meaning that a participation with the future users is organised before the planning process even starts (hence the 0). The consequence is that the participation is ended even before the designing starts and the user has little impact after that. Instead the participation should be seen as constant communication between architect, user and client.[33]

Hoffmann also is clear to point out that the way that the participational process is planned and carried out has an impact on how effective it is. It needs to be inclusive and democratic and make sure that the user is included in the creative process. Participation is not a linear process and it needs to be prepared and created for the group of users in the specific project. Designs that are developed in interaction with users will take longer and more time to get to a point where it is exact enough to go on to the next step. Essential to this process is communication and different types of mediums of storytelling and communication to relinquish any specific language that planners and architects might use. The Baupiloten methods are all centred around creating and telling a mutual story and the communication of atmospheres with different types of mediums. They have embraced the motto of 'Form follows Fiction' and mostly work with the users in different workshops throughout the planning and building of their projects.

"Preparation and development phase for the peda-gogical, spatial, economical and urban requiremen-ts on the building of the particular school." [35]

- Montag Stiftungen's definition of Phase 0

Phase 0

In Germany Participation is often diminished to the so-called 'Burger-beteiligung' which is a forum where the public can hear what the city is planning and submit official complaints. The public is not asked beforehand what they need or wish for and can only come with comments to the already existing plan.

For economical and legal reasons the construction process in Germany is separated into nine building phases, this is regulated in the so called HAOI (Honorarordnung für Architekten und Ingenieure), a national statute for construction contracts. None of the initial phases include participation and hence why the word Phase 0 has become the accepted term for the participation process. The other problem that this brings is that the participation is not required in the HAOI meaning there isn't always money diverted toward it. Even though more and more planning processes, especially public ones, are using the so called Phase 0 it is seen as a separate process and often organised by a different firm than the one that will later do the planning and/or the construction. The user is again only analysed and asked once what they want but no dialog or continuous process is started with them.[36]

| PHASE 0 | PHASE 1 - 5 - PLANNING & PERSMISSION | PHASE 6 - 9 - BUILDING & IMPLEMENTATION |

When it comes to schools it has proven very important to talk to the future users especially since education concepts can be complicated and their translation to architecture isn't always easy. The interaction of architecture and pedagogy is hence really important and can already before the planning starts put a focus on the smart organisation of the school and have a positive impact on the future building. It can also be essential for the long term use of the building if it already beforehand has a clear focus and spatial organisation that is planned to withstand reorganisations and changes in the educational method.[37]

Carl Bolle Grundschule, renovation with participation by Baupiloten, Berlin [12]

Cork pixel wall, part of the project Outside The Box by Tali Buchler, Zichron Yaakov, Israel [13]

Context
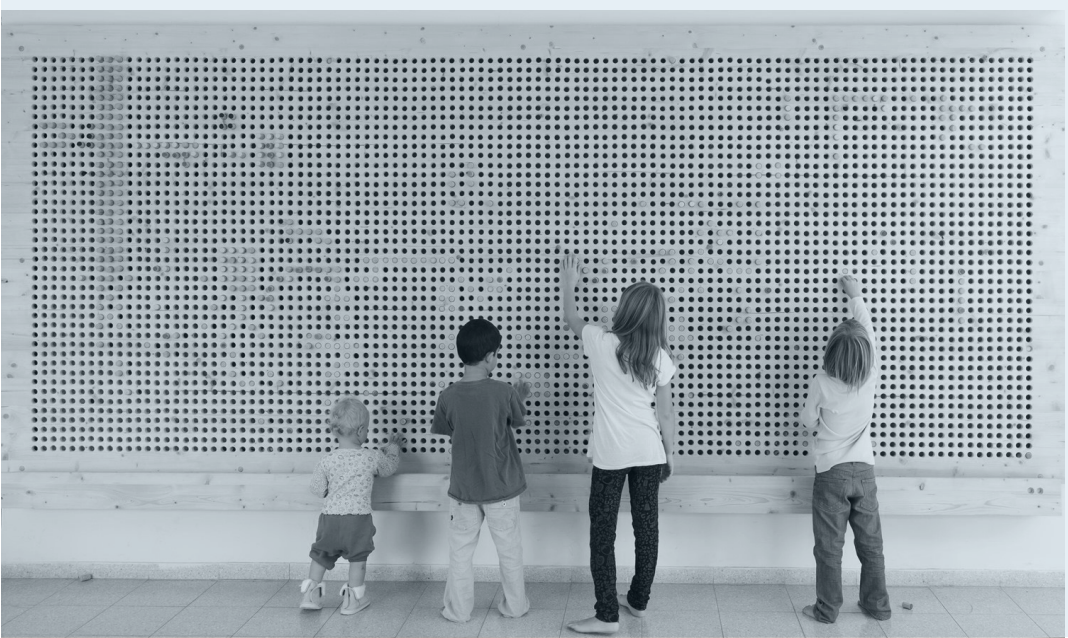
Schools & their systems

Most societies and cultures throughout history have taught their children in one way, using schools as an institution where students would gather to learn different topics. We see this in many ancient cultures in e.g. Egypt, India, Greece and Rome. Higher education has historically been a privilege saved for the wealthy and mandatory public education was introduced in Europe first in the 1800 Century. The Enlightenment era in the 1800 century brought new perspectives on society, liberty, tolerance, sovereignty and knowledge and with it many changes in education.[38]

Enlightened changes

The basis for most modern school systems can be found in Prussia, about 100 years after the introduction of compulsory education. It was developed by Wilhelm von Humboldt, a Prussian scholar raised in the enlightened Berlin and appointed director of the Section for Religion and Public instruction in 1809. He quickly set out to change the educational system and introduced a, for its time, progressive programme. The new system was standardised and to make sure that the new regiment was carried out throughout the whole kingdom he also founded a new teachers college and a department within the ministry to oversee curricula and textbooks. According to Humboldt, education needed to be separated from training

and was not meant to train the pupil in a profession but to "turn children into people".[40] The new system sought to educate the citizens to the point where they could educate themselves, it was meant to teach the population the knowledge that Humboldt claimed was necessary to lay the basis for a well-informed citizen, no matter the profession. Critics claim these reforms were done in an attempt to motivate the population in the wake of the grave loss that Prussia felt in the fight against Napoleon's army. A way to create citizens that would be good labourers and soldiers to defend and rebuild the country. Nevertheless, the system prevailed into more conservative times and into the start of the industrialisation.[41]
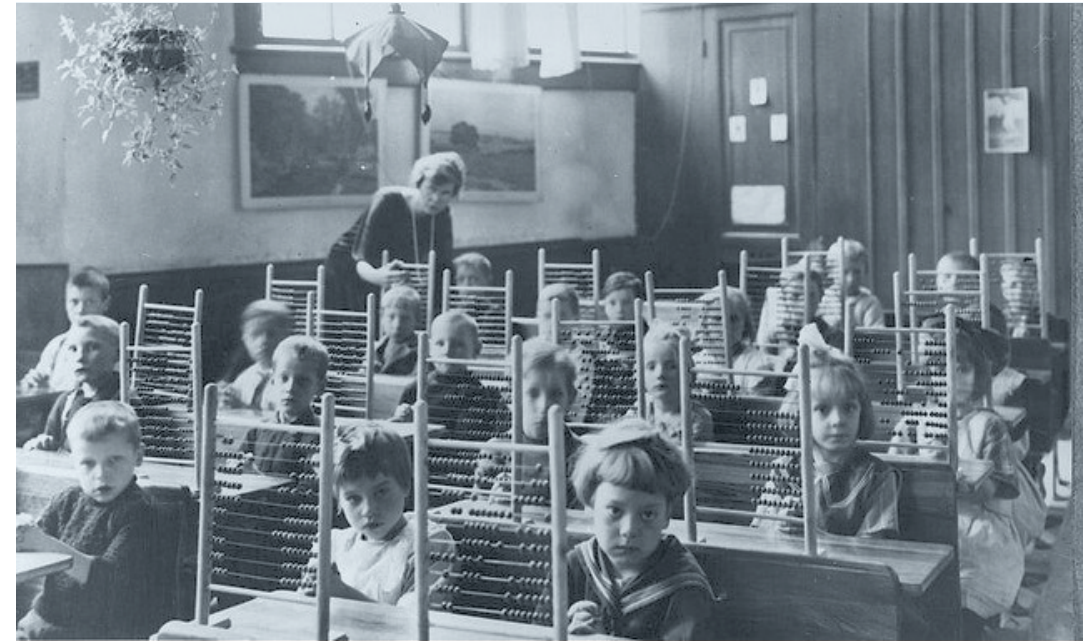
Children in a classroom around 1930 [14]

Mass production brought mass education

The industrial revolution changed the world as people knew it. New technologies led not only to new products but also to faster ways to produce them. This new type of production and manufacturing together with the supplying materials and energy to them required large numbers of labourers. Masses moved to urban areas to work in the new factories and a middle class arose from this new societal configuration. Berlin was one of the fastest growing cities and industrial hubs during the 19th century and its population grew from about 170.000 in 1800 to 2 million in 1905.[42]

The industrial society needed large numbers of manual workers, more than administrators or tradesmen for example, and therefore the system was set up as a pyramid. Compulsory education for everyone at the base with the focus on reading, writing and mathematics, a smaller group were then allowed into secondary school and university was for the very few. Often a second system of private schools were present for the children

of the wealthy upper class that would rather prepare them for secondary school and then university.

Compulsory education for the working class was seen as a way to teach the children to be obedient and take orders without rewards or threats of punishments. Just like the industrial production itself created identical versions of the same product the system of mass education was designed to mold children into certain conditions. A similar comparison works for the structure of the schools, like products, mass education was organized in stages starting with elementary school and going upwards towards higher education. Children are grouped according to nothing else but their birth year and seen as batches going through the different stages of education, passing certain tests and conforming to standards. Just like an assembly line, education became linear and forced children to conform to the chosen linearity.[43]

Modern Education

After WWII education became more inclusive and equal (at least in theory) and todays universities admit larger numbers to cope with the larger demand on intellectual labour. Even though the system has opened up, changed organisation style and names it has basically stayed the same since industrialisation. Plenty has happened in the research and application of pedagogical and educational methods, the way we perceive children and learning has changed in the past 30 years but the same school system prevails across the world. [44]

"When we see that children everywhere are required by law to go to school, that almost all schools are structured in the same way, and that our society goes to a great deal of trouble and expense to provide such schools, we tend naturally to assume that there must be some good, logical reason for all this."
45

- Peter Gray, Researcher

According to the Montag Stiftung Germany needs to re-evaluate the investment in the countries educational system and its buildings to be able to cope with the rapid changes in the world and our society. They also argue that most other sectors have changed, some drastically, in the last 100 years but education has stood fairly still. In the light of the rapid change they have come up with recommendation and commentary on how to reshape education and how to build schools in the future. Architecturally they emphasise that schools no longer can be mono-functional but rather need to be seen as a learning and living space that is also, at least partly, open to the surrounding communities. They are also pushing for more financing to be given to education and argue that Germany is spending comparatively little on each student. Education is a way for the country to be able to compete on the global market.[46]

The following pages showcases some example of recently built schools.

CHANGES IN SCHOOL TYPOLOGIES & OPERATION
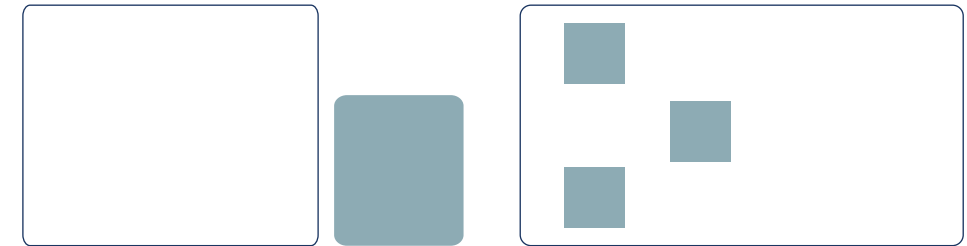
From seperation to inclusion
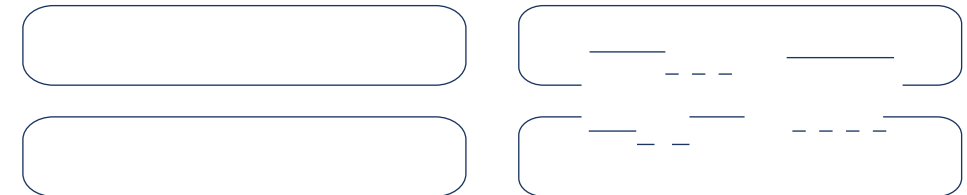
From corridor to activated circulation space
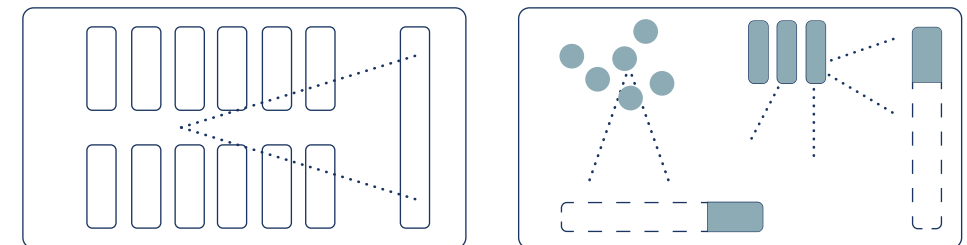
From Auditorium to Forum
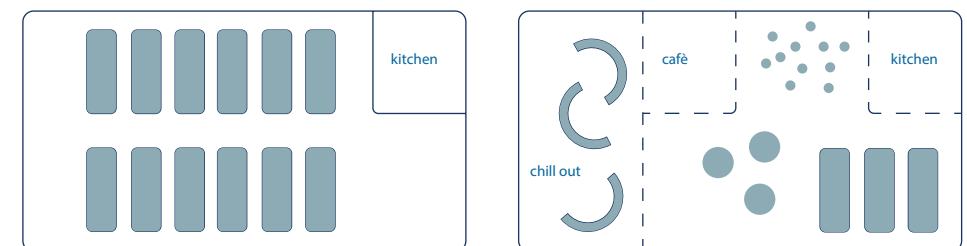
From cafeteria to open food court
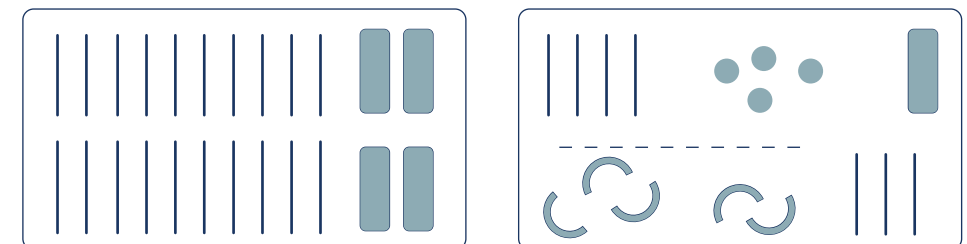
From library to self learning centre

Source: Montag Stiftungen[47]

Bildungshaus Westpark in Augsburg, Germany [15]
Fig 8 - Elementary & Middle school in Kuhmo, Finland [16]

IJBurg Collage in Amsterdam, The Netherlands [17]
Bobergsskolan in Stockholm, Sweden [18]

Integrated Secondary School, modular building in timber completed in 2019, Berlin-Mahlsdorf [19]

After school center on Campus Rutli in Berlin-Neukölln [20]

Schools in Berlin

Berlin has about 770 schools with 400 of them being elementary schools. 360.000 children are in school and another 87.000 in professional training schools (Berufsschule). The number of pupils have been steadily growing for the past 10 years and is estimated to keep growing.[48]

Berlin is growing and with it the need for schools and learning spaces, something the city has to little of. The so-called 'Schulbauoffensive' was launched by the city administration in 2017 to try and curb the lack of schools spaces (as in spots for children in schools). The administration wants to be able to cope with the anticipated extra 10.000 (lowered from the initial 24.000) spots needed in 2024 and are trying to speed up the building and planning of new buildings. In the meantime temporary constructions and/or overflowing classrooms have become the preliminary solutions. Both the offensive and the temporary 'solutions' have been met with plenty of critique for starting too late, not functioning and most of all for letting many children down by having them attend school in an environment that is neither healthy nor enhancing their learning capability.[49]
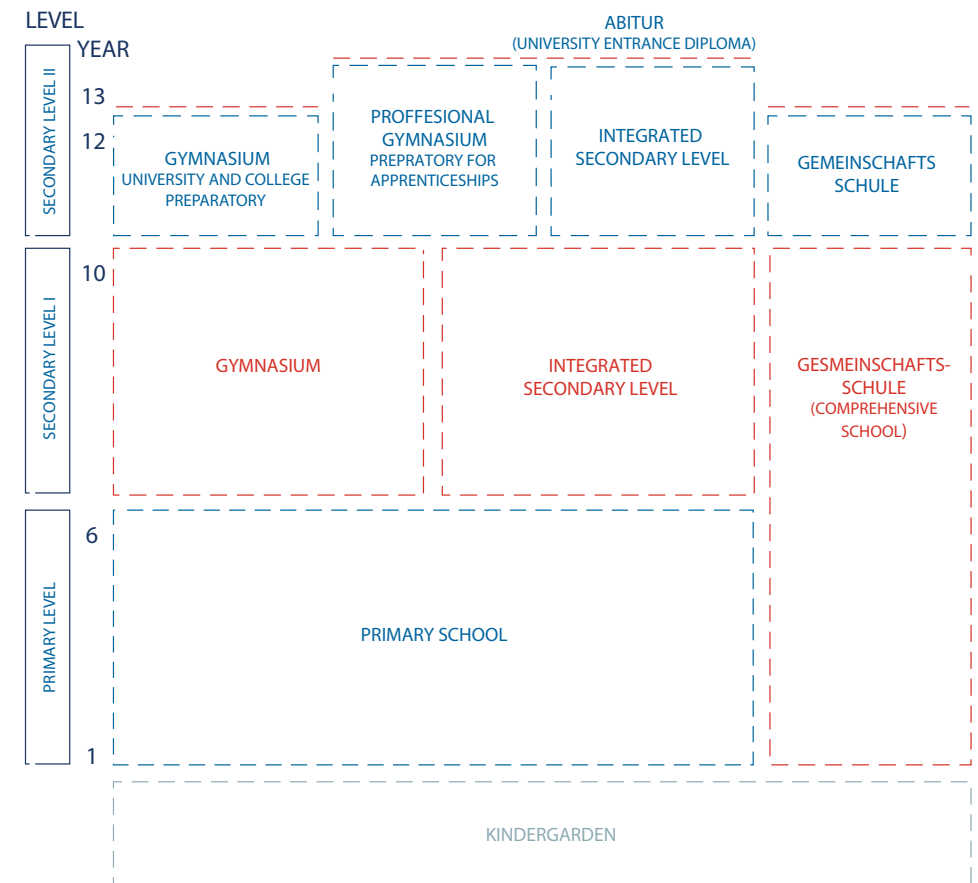
The school system in Berlin

Schulbauoffensive

Roughly translated to 'the school building offensive' it is the current Berlin government's largest investment and 5.5 billion euros has been aside for this program that is to be carried out over the next 10 years. The program includes renovations and reactivation of old school buildings, temporary and modular add ons and the building of another 60 schools across the city. Meanwhile (2020) plenty of schools have been renovated or are under renovation, 3 modular schools in timber have been completed and the search for new locations are well on its way.[50]

For the 60 new schools that are planned the city decided to rework the outdated regulations for school buildings. A committee of politicians, educators and architects worked out the new recommendation and directives. Well aware that the classical corridor school is no longer sufficient for modern educational methods this group chose a new type of school, the so-called compartment school. These schools are organised in different compartments, or clusters, often with the teachers room set in-between two. Each compartment has a number of classrooms clustered around a forum which functions as a space to teach larger groups and has spaces for self-learning, performances and presentations but is a place to hang out during breaks. It is supposed to be a communication place for that specific compartment and instead of having classical corridors that only have one function these forums expand the educational space available to the school. Functional rooms like wardrobes, toilets and storage are shared by all the users of the compartment.[51]

For a city with a strict budget and little leeway in programs like this Berlin has decided to construct some (because of missing plots and space it is unclear how many) of the schools in a modular way. It makes the
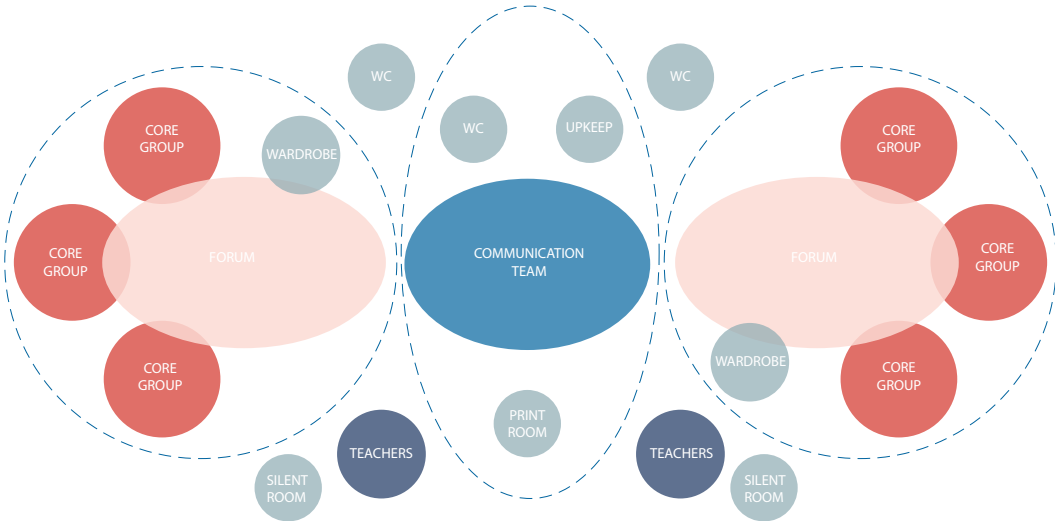
Functional diagram for a compartment school according to the new Berlin school building directive

production of building components cheaper, quicker and easier to plan numerous schools at once. In late 2017 a competition was published for this purpose and two designs were chosen for two different sized schools (one with 3 classes per year and one with 4 classes per year). These designs are currently being re-worked and once appropriate spaces and plots are found they will be built more or less identically on all locations. The design of these schools is based on the program that was developed by the committee and except the few children that were asked in the process of creating that program, none of the future users have been asked about the designs or how they interact with its surroundings.[52]

The bureaucracy around the building of new schools is somewhat complicated because there are numerous departments involved both on city and district level. Simplified, the city is responsible for the secondary schools and the districts for the elementary schools. When it comes to the elementary schools there are more projects that are directly planned on available plots. They are still to be designed according to the new school directives but have more leeway to integrate with whatever context they might be in. For many of these projects the city has assigned HOWOGE, one of Berlin's public housing associations to construct and operate the new schools. In their normal line of work, housing, they are also commissioned to provide basic infrastructure, like kindergartens in the areas where they are active and hence the city's choice naturally fell on them.[54]

3 modular timber schools have been designed & constructed in under a year.[53]

Phase 0 for the new Berlin schools

The new school program by the Berlin senate requires the planning of new schools buildings to go through the so called Phase 0 before the planning starts. As already stated, the modular schools that have already been designed will therefore not have this requirement applied to them. The projects in planning or preparation will have to conduct this phase with the respective future users and different groups that will have an influence or use to the new school. The city has brought out a manual with recommendations and information on how to conduct the phase. To make sure that the participation still takes place in this highly time sensitive and sped up building process the city has allocated extra money for the Phase 0, each school can get 20.000 - 35.000 euros to conduct the participational processes.

Among others the office "Baupiloten" has been commissioned to organise some of these participational programs. Together with the requirements for the specific site, the new school directives, the results from the Phase 0 will be collected and presented as the parameters the future design should be based on. That means that once the Phase 0 is completed, HOWOGE will publish the architectural competition for the school in question.[55]
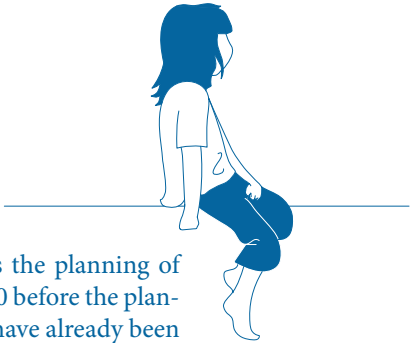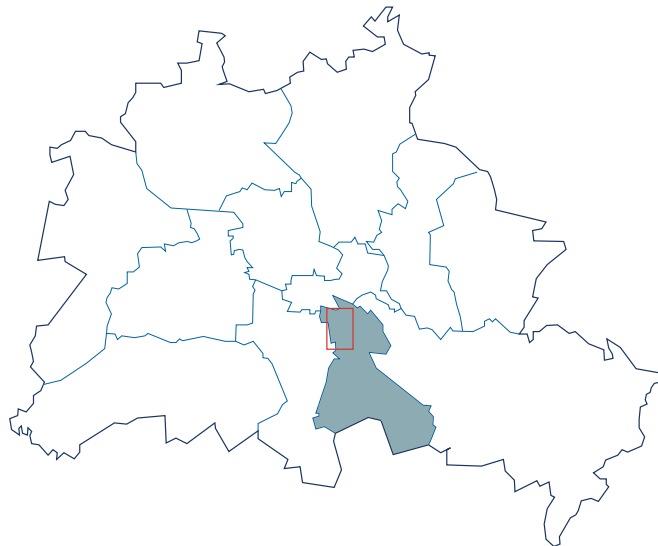
Berlin - Neukölln

Neukölln is a neighbourhood in flux, any description we use for how cities change can be applied to this area at the moment. It is a neighbourhood full of contradictions, it changes from block to block and has numerous parallel universes. Historically a working class part of Berlin, on the southern border of the historical and now inner city, it has always been the collector for things or people that Berlin did not really want or could not find the space for.[56]

With the industrialisation and immense influx of people 'Rixdorf', as it was called at the time, grew from a small village of some thousand inhabitants to a city with a few hundred thousand inhabitants within just 50 years (). To rid themselves of their terrible reputation for being a place of decadent entertainment and drinking, the independent city changed its name to Neukölln in 1912 and became part of greater Berlin in the large reorganisation of the Berlin area in 1920. During the division of Germany and Berlin it was the last district before the border and had the wall to one side. It was also a district where many immigrant workers were able to settle during the economic boom of West-Germany in the 60s and 70s.[58]

The population of Neukölln come from 160 nations.[57]

Berlin and its 12 districts with Neukölln and the map section shown

Neukölln is one of the densest inner-city districts in Germany.[59]

Today it's a place with various groups of different ethnicities, socio-economic status, cultures and age. It is changing rapidly, it is now on the radar for larger investors wanting to build and big commercial firms wanting to find a foothold. This means, not only people living there for generations are being pushed out by economically stronger citizens but also that smaller businesses that might not fit the preferred form have to close

Herrmanplatz

Hasenheide

Hemlholzplatz

Tempelhof

St. Thomas

Konrad-Aghad-Schule

Peter-Petersen-Schule

St.Jerusalem

Körnerpark

Neue St. Jacobi

S-bahn Herrmanstrasse

North-East Neukölln

● School

○ Play ground

▦ School yard

▨ Park

▨ Cemetery

down, it is gentrification at its highest point. All these factors are creating very many different realities within the same neighbourhood, resulting in the district's citizens living very different lifestyles, with very different perspectives. Schools are the one place they all come together.[60]

Neukölln as a whole is one of the few districts that has not been hit as hard by the school crisis, but locally there is an urgent need for elementary schools. This is foremost in the northern inner city part of the district and that area also lacks space for children to play on, be outside during their breaks or free time to engage with the city and nature (albeit urban nature). Two elementary schools on Thomasstraße, have to share a small school yard for example, they alternate breaks to make sure there is enough space for the children to play and explore.

The lack of space for schools and for the children living in the dense northern part of Neukölln has led to the local administration looking for any space available fit for this purpose. The two schools on Thomasstraße are a great example, the Konrad-Agahd-Shule is about to get a school yard on the preparation area of the St. Thomas Cemetery across the street and the Peter-Petersen-Schule will eventually get a new school building. The new school building will be on, for some an unconventional spot, the former cemetery Neue. St. Jacobi on the other side of Hermannstraße, planned building start is 2021. Once this building is completed Konrad-Aghad-schule can extend into the building that is currently occupied by the Peter-Petersen-Schule.[62]

There are 29.000 Pupils in the district of Neukölln.[61]

Neue St. Jacobi

Neue St. Jacobi is one of five former (and current) cemeteries on Hermannstraße in Neukölln. It was founded in 1867, then on a field outside of the city of Berlin and the village of Rixdorf. The city was growing rapidly and with it the need for burial grounds. The cemetery is long and narrow with a classical typology for its time, a mid-axis and sections to the right and left. The front part, the section towards Hermannstraße, is the cemetery and burial grounds whereas the sections towards the end were never used as burial grounds but as space for preparations of soil, plants etc. Even though the cemetery was officially closed first in 2019 there have been very few burials here in the last years and sections with graves will soon no longer be classified as burial grounds. This is because in Germany a grave is protected but ceases to be classified as a grave after 25 years, with a 5-year leeway period, unless the family keeps paying for the grave. Except for the large family graves along the righthand outer side most graves on the Neue St. Jacobi are no longer active but because many of the tomb stones are still in their place it may have the appearance of an active cemetery.

Neue St. Jacobi cemetary
Neue St. Jacobi cemetary

Air image of Neue St. Jacobi [21]

The partitioning of the Neue St. Jacobi according to the IFEK [22]

The 'pre-design' released by HOWOGE in November 2019 [23]

In a constantly densifying city with shrinking land to build on, these types of common ground are getting more and more attention and so there are many claims to the Neue St. Jacobi cemetery. As a pocket of green it is a rare spot in the dense northern part of Neukölln, with lush trees and a high biodiversity many would like to preserve it but the owner, Evangelische Friedhofsverband, can't afford to maintain it. Together with the municipality and the urban planning firm Stattbau they have come up with a long term development plan for the Jacobi and the other cemeteries on Hermannstraße, the plan is called IFEK (Integrated Cemetery Development Concept). This plan earmarks the former prep-area of the Neue St. Jacobi for the building of infrastructure, preferably a school but also potentially for housing.[63]

For now, the space is being maintained by Prinzessinnengärten, one of Berlin's largest Urban Gardening collectives, who in return can operate their projects here for the next 30 years. Their core idea is to bring people from the neighbourhood together, garden and teach them about urban food production, biodiversity and climate protection and to develop a future-oriented urban lifestyle. They already are planting produce, holding bees and preparing soil on various locations on the cemetery. They also have a cafe close to the street and are planning numerous other activities, like a restaurant and a project pavilion for the school classes they work with.[64]

The back of the cemetery, towards Oderstrasse, is today inhabited by a collective of rolling homes, Wagenburg in German. They were allowed on to this space in the early 90s when they were removed from their original plot close to Potsdamer Platz and were allowed to stay until further notice for a small amount rent. Once the preparation to build on this section of the cemetery starts, they will be evicted.

As mentioned in the previous section HOWOGE is being commissioned to build schools around the city, and Neue St. Jacobi has been discussed as a future location for an elementary and secondary school. The circumstances have not been completely cleared yet though and are currently still unclear. This because the ground belong to the original owner, the Friedhofsverband, and the district wants to own the ground before building on it. Once the grounds are in the hands of the district, they will commission HOWOGE to build the school who will in turn rent it back to the district. Not only because this process seems complicated has it received criticism but also because HOWOGE has an interest in the designated housing area, one they have been promised in return for the building of the school. Fear of rising rents and developments right outside their windows have made the neighbours and surrounding communities protest the plans.[66]

There are 220 cemeteries in Berlin

39 are inactive, another

27 have inactive sections.[65]

Peter-Petersen-Schule, exterior
Peter-Petersen-Schule, interior
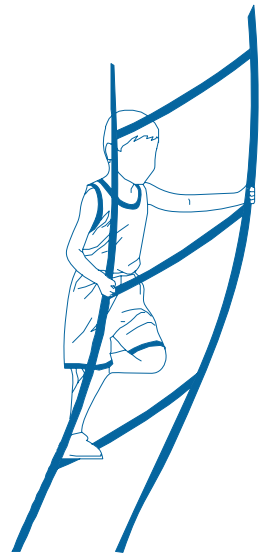
Peter-Petersen-Schule

Compared to most other public elementary schools in northern Neukölln the Peter-Petersen-Schule (PPS) is a bit different. First of all, they don't have a catchment area, the school across the yard is responsible for that area of the district. That means that children from the entire northern part of Neukölln can go to this school. Secondly, they have chosen a different educational method and are working according to the so called Jenaplan-method, a method developed by the namesake of the school and will be explained more detailed in the next section. It has attained the status of being a Unesco Project School meaning they have a strong emphasis on democracy and human rights.[67]

Even considering the somewhat different parameters, the school is still a mirror of the Neukölln community and 64 % of the children come from non-german speaking households and 38 % come from families with low income. One class of 25 children can hold as many as 14 native languages and most pupils are bi- if not also trilingual. The school has about 300 pupils, 30 teachers and educators. It splits its classes into 'small' and 'big' groups meaning children in grade 1-3 are grouped in one class and grade 4-6 in another. According to the Jenaplan-method this gives children the chance to grow and learn at their own tempo and seldomly is a child forced to stay back a year.[68]

38 % of the cildren come from low income families

64 % of the children come from non-german speaking households

The basic educational goal of the PPS is the development of each student's individual personality and empowerment for community action based on human rights. They have put an educational emphasis on the environment, democracy, media and sustainability. The pupils become familiarised to these themes in various projects, workshops and activities where they have to work with each other, their environment and with people from outside the school.[69]

Jenaplan-method

This educational method was developed by Peter Petersen at the university of Jena in the 1920s. He was a professor in educational science and responsible for the test school at the Faculty, the school is also where he started and tested his methods. The method set out to be a general 'peoples school' in which the teachers should instruct the children to become practical, open-minded and communicative people, instead of teaching them the classical academic courses.[70]

The basic forms of learning according to the Jenaplan-method - Teaching, Conversation, Play and Celebration - structure the weekly and annual rhythm of the school. Except for the four pillars the method is also centered around independent and collective learning, learning by doing, communal life and a shared responsibility between parents, children, teachers and community.[71]

Teaching is meant as the basic form of learning at school and is structured differently with individual, partner and group work, free work phases, and weekly work schedules as part of the teaching program.

Conversation is the basic manner in which coexistence is manifested in a communal school: the weekly introduction in a circle is used to report weekend experiences, talk about problems or about the planning of the week is just one example. Additionally round table discussions, debates and meditation are part of the everyday life at a Jenaplan-school.

Play is considered an essential part of learning and life in school, thus it should have a permanent place in the everyday teaching.

Celebration is the fourth basic element of coexistence and learning in a Jenaplan school and has a high priority. The end of the week, seasonal celebrations, birthdays etc are celebrated in small groups or with the whole school, the organisation and performing at the events are also considered important.

The basic four pillars have remained the same and the modern day Jenaplan-method is openly based on Peter Petersen's concepts but its practitioners have added another 20 basic principles and its continuously updated according to current knowledge of education and teaching.[72]

"Und wenn irgend etwas nicht so ist, wie es sein sollte, so bringt man die Sache vor den "Kreis", da sagt man sich ganz ehrlich die Wahrheit. Strafen von seiten des Lehrers sind nicht nötig. Man hält aufeinander, auf die Gruppe, auf die Schule, Selbständigkeit, Liebe, Gemeinsinn wächst hier. Es sind Kinder aller Schichten, aus den verschiedensten Elternhäusern und Schulen zusammen, und sie fühlen sich als Einheit, obwohl sie erst ein Jahr zusammen sind." [73]

- Bericht einer Mutter, 1926

JENAPLAN PILLARS

WORK

CONVERSATION

PLAY
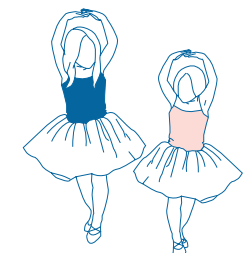
CELEBRATION

PARTICIPATION →

Methods & Process

"Cities have the capability of providing something for everybody, only because, and only when, they are created by everybody." [74]

- Jane Jacobs, urbanist

From the beginning it was clear that the classic architectural process, also used for the design of schools, was not something for us. Analysing the urban planning off the site, dealing with building regulations, municipalities and investors before asking users what their point of view was on the matter was never a plausible pathway we wanted to undertake. We felt it was necessary from the very beginning to try to find a system that could not only solve the spatial problem short term, but that, after questioning the whole process, could connect the users and all the actors involved and create a design process that would lead to a space and neighbourhood everyone would like to live and invest in. Thats why we saw a potential in the Participation Action Research method and after months of researching and understanding the problems related to growing up in a dense city and in the german school system we decided to take the next step and go in to the participational part of our thesis.

The first step was undoubtedly to ask ourselves what our role is and what influence we, as professionals, want to have on a community of people. Architecture is a very broad theme and can be used in many different ways to improve or even, hopefully less frequently, make situations worse. In this regard, much of our research had been focused on trying to understand which of the different approaches offered by architecture we wanted to use. It was at this point that we began to wonder whether this situation was really so unilateral. Does the children and inhabitants of a community the ones that have to learn to use the spaces that architects

use or should the architects be the ones to ask, listen and learn from the future users, in this case the children?

During one of our interviews with the dean and teachers of the Peter-Petersen-Schule we were offered to work with the children at their school. This school has been waiting for a new school building for 15 years and are now the ones intended to move into the new school on the Neue St. Jacobi. Unfortunately they have not been involved very much in the planning of the building and have very little information about the amount of involvement they will have. It was at this very moment that we realised how necessary it was, even before designing a school, to change the system with which schools are designed.

For the school our workshops would be a way to include some of the needs and desires of the children in the future planning of their school and for us it was a great way to try out our knowledge and process. We began to think about how best to include children in a process from which they are normally excluded. Our extensive research about participation in architecture to organise different methods into workshops fit for the different age categories of the children we worked with.

Methods & Tools

Methods and tools are ways too, in a creative way ask users about their needs and desires. They are meant to challenge the participants and spark their imagination so that even unconscious needs might be expressed. They differ in time, effort and preparation and are more or less suitable for different situations and can be combined into workshops. The following pages contain our method cards.

Each card has all the information needed to be able to organise and conduct one of the methods or tools. On the left hand side are facts to what is required, such as materials, preparation etc, to be able to execute the method in question. The key for the different symbols you find here to the left. On the righthand side of the cards the process is described with more detail, including alterations or versions that could work better with different groups of children or people. The text is separated in the following categories:

- Information
- Preparation
- Procedure
- Documentation / Evaluation
- Variations / Advice

🕐	Time needed, in minutes
👤	Suitable for Adults
👤	Suitable for Children
✈	Infortmation to parents or community
🖐	Materials for Handicraft
✕	Building materials
🧳	Other materials
🖼	Images
📷	Camera
📝	Written documentation / Protocoll

COLLAGING YOUR WAY TO SCHOOL

Session	Time	Preparation	Participants	Materials	Documentation

1.

2.

3.

[24]

This is two tools combined into a workshop, a classical mapping of the neighbourhood and the way the user moves in it and creating collages as a tool to spark the users imagination. On the one hand it's a practical tool to see the city and the way to school from the child's perspective and on the other hand it's a playful way to get the children to tell their wishes and needs for their experiences in the city.

Disposable cameras for each participant
scissors, glue and paper
letter to the parents informing them of the workshop

The workshop is split in two units: The first one is to explain the exercise and answer any questions the children might have. The instructions are to take photos of anything they find interesting, hard, funny, anxious or strange. They can photograph places, streets, objects or voids, and they can photograph these things however they would like, its completely free as long as in the urban space they move in, preferably on their way to or from school. After a week the cameras are handed in and the pictures developed before the next session.

At the second meeting the users are asked to briefly describe their process and show 1-2 of their favourite pictures.Then the participants are handed a piece of paper, scissors and glue and asked to college their fantasy or ideal walk to school. During this process the moderator(s) can walk around and talk, ask for some stories and get to hear more experiences from the first part of workshop.

This workshop visualises the neighbourhood and makes it easier to compare and talk about. It also makes clear where or what problems children encounter and the basic needs or solutions can be discussed directly with them.

To make it easier to visualise where the school is in relation to the neighbourhood or where the children live, a larger map can be printed and used to map the school way.
Instead of individual collages, all participants can create one large one on a map of the neighbourhood.

COLLAGING THE ATHMOSPHERE

Session	Time	Preparation	Participants	Materials	Documentation
1.	(90)	(60)			
2.					
3.					

[25]

[26]

[27]

Drawing or collaging an atmosphere is an easy way to inspire kids through science to express their imaginary worlds.

Collect pictures of different natural areas, different textures, places and phenomenon and sort them into different atmospheres or colours schemes. Paper, pencils, crayons and other drawing materials are required.

The teacher or moderator tells stories or facts about the different pictures and the phenomena or places rapresented on them. The children can also add their own experiences or knowledge.

All the children are then allowed to take inspiration, cut the pictures and create collages or draw their imaginary worlds and places. Once they are done, every child present their drawing and tell the story and the imagination behind it.

The pictures can be hung up next to the collages of images and serve as an exhibition and a place to keep talking about imaginary worlds.

The stories and imaginations told after the exercise can be collected and narrowed down to key words and feelings. These can be used in the design process together with the drawings from the kids.

The images can be used as a way to talk about science and nature in class and teaching.

To give the exercise more variation different image collection can be made and the participating children can choose one of the collections. For example images with different colours, elements or temperatures. This would also make it possible for the faster children to make a second drawing.

CREATE YOUR OWN SCHOOL PARADISE

Session	Time	Preparation	Participants	Materials	Documentation
1.	90	30			
2.					
3.					

[28]

[29]

[30]

This workshop is accessible for numerous different ages and groups. In a playful and fun way the participant can tell their needs and maybe fantasies of what they would like for the space or a new building.

Gather material and images that are not architectural or are smilingly mundane.
Glue, scissors, carton, boxes etc.

Each participant collects 5-10 images or materials in which they find an atmospheric feeling. They then organise them in relation to each other, start cutting out the parts they find essential an placing them so that an atmosphere of choice is emphasised. Making the images more tangible by folding, crumple or ripping them is also possible, what ever the participant want to convey their image or effect.
Before the images and materials are glued together it's a good thing to ask the participants to test and control their world: are the images, in relation to each other, communicating the quality they want them to? If not, add an image and then glue them together on a piece of carton or in a box.

Once the collage is finished its important to give the work a title and a short description. Each participant are welcomed to present and describe their work with it discuss what these different qualities and atmosphere might have for an impact on a space or rooms.

The imagined world and the story told around it can be used to find out the participants wishes, both spatial and programatic. These wishes can be then be used as a guideline in the design and planing process.

This tool can be practised as a 2D- on a paper or piece of carton or in a box as a 3D version.

Any materials can be used and a theme can be decided on the materials, like only recycled or found materials can be used.

GUIDED TOUR THROUGH SCHOOL

Session	Time	Preparation	Participants	Materials	Documentation
1.	(60)	✈ (30)	👤 👤		📷 📝
2.					
3.					

[31]

[32]

[33]

Mapping the space where the children spend most of time of their days can be an important tool to understand not only the space itself but also how each person uses it and maybe what it's lacking.

This tool doesn't need much preparation, if wanted disposable cameras can be handed out to the children. Decide on a framework for the tour, are the children going to show you through their favourite spots or is the theme rather that they show how their day proceeds through the building.

The moderator or planer lets one, two or a small group of children take them through the building, the children shows their favourite places, places they might find peculiar or whatever comes in to their mind.

On each special spot or places where you stop the child can take a photo and briefly tell their feelings, experiences or wishes around the place.

The stories and comments can be documented, written down together with pictures and or drawings.
If possible mapping how the children move in the building is a great tool for further design and planing processes. This would require a floorpan of the building and marking your way when going around.

This method can be used with teenagers but on a larger city scale, they can show around the neighbourhood and what they experience in their everyday life.

STROLLING THROUGH THE 'KIEZ'

Session	Time	Preparation	Participants	Materials	Documentation
1.	(90)	✈ (30)	👤 👤		📷 📝
2.					
3.					

[34]

[35]

According to Strollogy, the science behind the reflected stroll, a stroll where you start reflecting on the neighbourhood but also on the perception of the neighbourhood a way to enhance the awareness of the small social structures and see it from a different perspective. In this case it is also about examine the building site, figuring out who has claims to it and what qualities it has/brings.

Normally the walk is done without preparation but if there is a time pressure it is a good idea to scout out the route beforehand and prepare with needed materials like sketchpads and pens.

Walking from the children from the school to the site, already on the way start chatting about places they might know or have stories about. Once on the site the group can walk around as a whole or be split into smaller groups to examine the site properly, take notes, photos and make sketches.

As an added method, each small group can take the rest around their found spots and places they noticed and so give short guided tours.

All images, sketches and stories can be collected and bundled to a catalogue for the site.

WORLD CAFÈ

Session | Time | Preparation | Participants | Materials | Documentation

1.

2.

3.

This is a discussion tool to share knowledge and discuss different topic in different and rotating groups.

Each theme needs a moderator who should be prepared on the theme and able to start a discussion. It also needs materials for documentation like paper, pens, posits, little cards etc.

The method and themes are briefly explained and then the group split into smaller groups and go to the according themes. A timer is set on 10 - 15 minutes and the groups starts discussions. When the time rings everyone changes place and theme, going to the next one they are interested in. This way the groups are always mixing in new ways and everyone gets to discuss each topic.

Once everyone has been at each table or theme the moderators hold a short presentation about what's been discussed and the outcome of each theme.

All produced materials should be documented. The groups can also choose to try and condense the information accumulated and/or prioritise the themes.

Process

Once we had our methods and tools decided to combine them into different workshop formats that would fit the different groups. Many of our chosen methods we derived from 'Baupiloten', whom we mention in the Research section of this book. We choose to do so because they are one of the more experienced firms for participation in Berlin, many of their methods have been tested in numerous different projects and planning processes. We also consulted with another firm who has wide experience with citizen participation, Nonconform. They often conduct intense workshop formats over numerous days in areas or villages that are about to be redeveloped or have something new built there. These two firms have different approaches and work on different types of projects but have both been an inspiration to us and based on the knowledge we gained from them.

In dialog with Nonconform we brainstormed and created workshop formats that could challenge the children to break out of the set norms and conventions of a school. These ideas were the basis for the workshops we tested and then narrowed down to the four formats we used at the Peter-Petersen-Schule.

We planned the workshops so that they were fairly open and flexible, without a strict time plan. Most of all we felt it necessary to be able to change them on spot if something wasn't working or the children were more interesting in certain aspects of the workshop.

PARTICIPATION
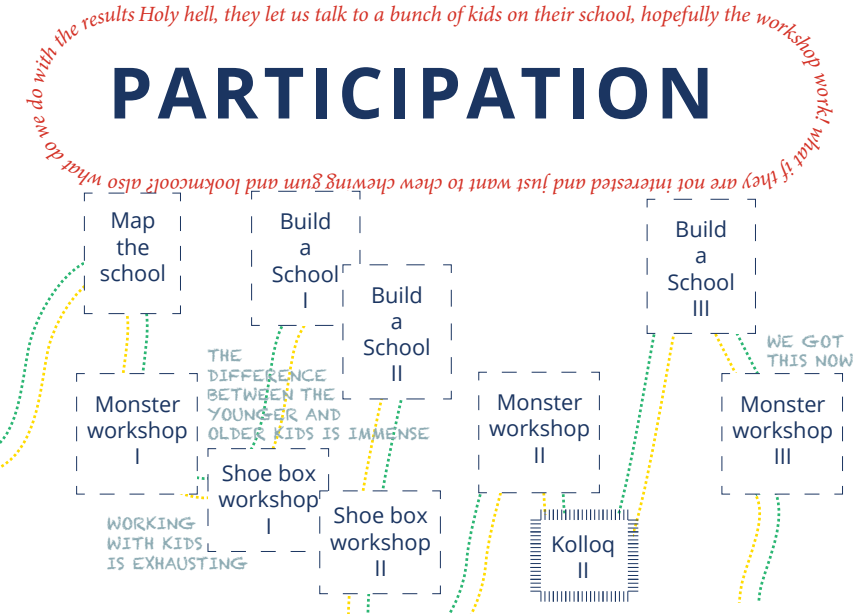
Part of the process timeline, highlighting the workshops

We worked with many classes and groups but closely and repeatedly with two groups of children. The class 1.6 with whom we held the monster and show box workshops was the younger group (ages 6-8). The other was during the workshop-hours for the older kids (age 9-11) where we got to work with a group of 12 children continuously for 4 consecutive weeks. The following pages describe the process and documentation of the different workshops and how we conducted them.

75 CHILDREN
MONSTER WORKSHOP

25 CHILDREN
SHOE BOX WORKSHOP

300 CHILDREN
PETER-PETERSEN-SCHULE

12 CHILDREN
MAP THE SCHOOL WORKSHOP

12 CHILDREN
MODEL SCHOOL WORKSHOP
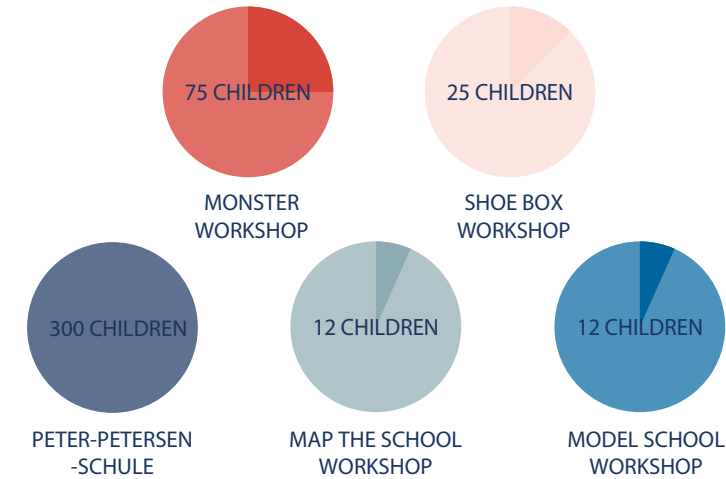
Number of participants in each workshop

Collaging atmo- spheres

16. 01

The children are asked to collage a world for their monster with dif- ferent patterend paper.

DOCU MENT ATION

1st, 2nd, 3rd class

23. 01

A classroom in a shoebox

Building imaginaries schools

Building imaginaries schools

A classroom in a shoebox

30. 01

16. Collaging
01 atmospheres

This workshop was carried out with three different classes of circa 25 kids, in the age range of 6 - 8 years old.
We started the workshop with a chair circle and asked each person to say their name. We made a little introduction to what we were going to do: make a collage on an A4 with three pictures chosen from one colour pile. The images were organised in red, green and blue and all featured natural phenomenon.

We then told all the kids to pick a little monster out of our bag. Once everyone had a monster they had to name them and say their favourite food and favourite colour going around the circle. The children were then asked to pick their three images and make a dream school for their monster.

The results varied and some children directly had a vision, some needed more help or didn't know where to start. Some children made a collage larger than their given A4 or drew instead of cutting up the images. At the end we had a little presentation or a 'Museumsgang' in which everyone walked around, looking at the pieces, followed by a little Q and A time.
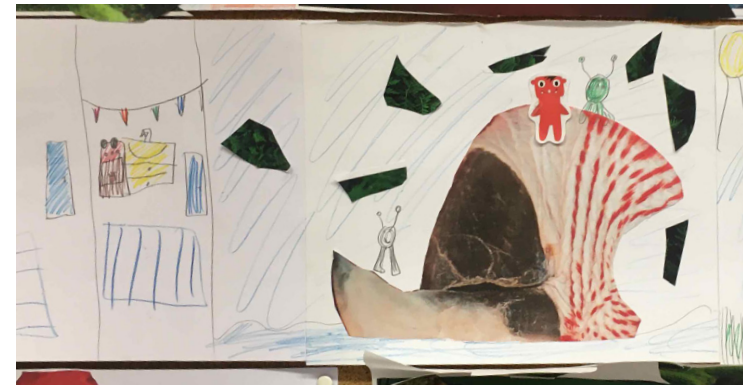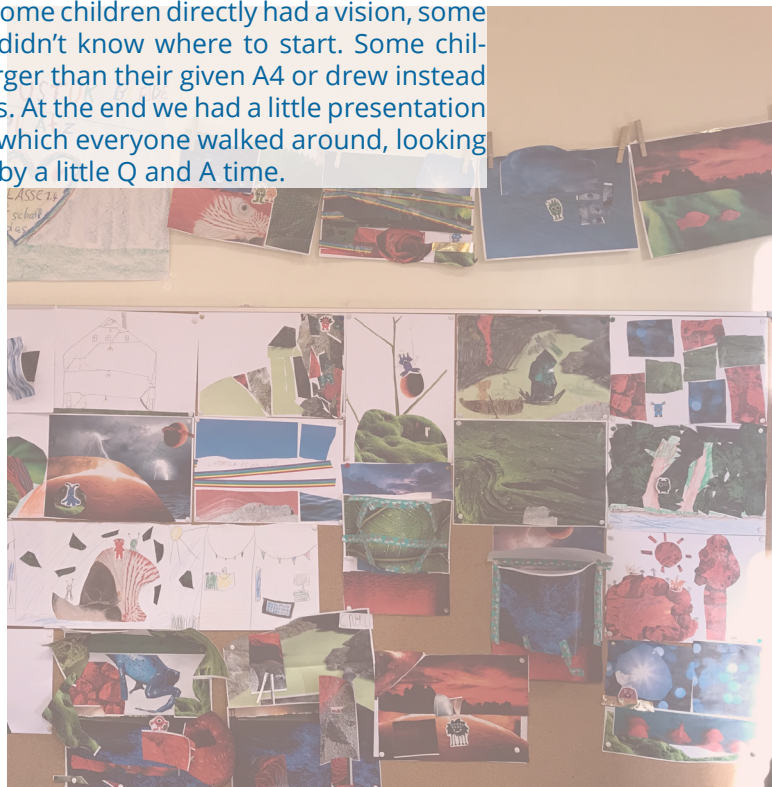
23-30.01 Building imaginary classrooms

To be able to ask the kids further and challenge them to a much more spatial task we conducted a shoe box workshop with one of the young classes of 25, children aged 6-8. They were all asked to bring a shoe box or equivalent from home but also to bring things that normally would be thrown away, like little plastic boxes, fruit nets or papers. We had also brought the materials from the previous workshop and plenty of other items of waste.

We asked the children to build their dream school or dream classroom for them or/and for their monsters from the last workshop. Some choose to build a home for their pet lizard or create numerous adjoining rooms. Most children had a full story in their head of what they were building. We had balconies, flower gardens, classrooms, hiding spots, skate parks, labyrinths, slides, pools and surprisingly many rubbish bins.

Once they finished their boxes, we asked them to write a title for their box and three descriptive words on a little sign that would be displayed with the boxes. With varying ability to write some children drew the floor plan or the different feelings that their box gave them. The boxes were then displayed in the glass vitrine outside of the classroom.

GUT
zum schulz

Supi!

Da hinter sind Spann en

Bänke bauer

SCHLECHT

zu zu Klein

Oke

Symmetrish? sieht &Sie anders

Zu Klein

Schlecht Blät !!

Zur sicherheit

SCHLECHT

Mann weiß wann AGs ausfallen!

Der Comp- zu klein

das befür- worte ich

Neu

Küche weg: größerer

Copuyter sind Teilweis kaput

Schlecht: zu wenig plätze

Schöne viele Pflanzen

SCHLECHT diese

Schlecht zu w

ich heipe nicht MARY sondern

Sie heißt Mary !!!!!
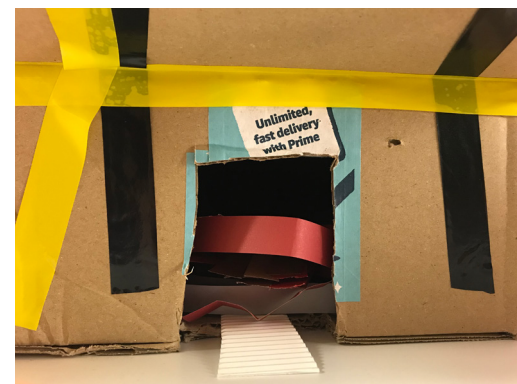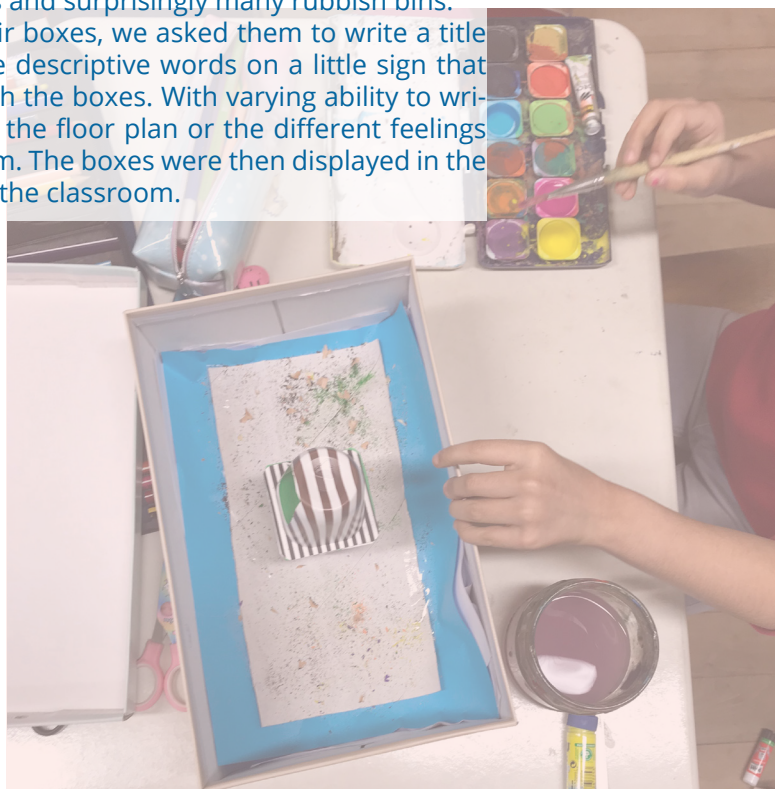
DOCUMENTATION

4th, 5th, 6th class

16.01

Mapping the school

Tour of the best and the worst places of the scool guided by the children.
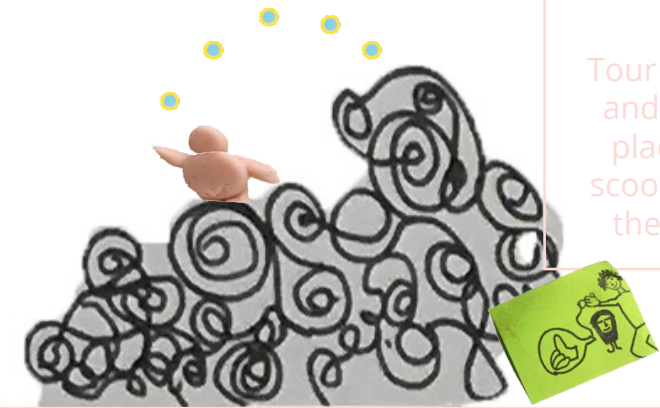
23.01

Building imaginary schools

30.01

Building imaginary schools

13.02

Building imaginary schools

16. 01 Mapping the school

For the first meeting with the group of 12 children we planned to get to know them first, by trying to figure out what they like or dislike about their school. We met in an empty classroom and in a circle, sitting on the floor, we had a short introduction, got to know each other and the children got to ask all the questions they had about the workshop, the new school, us and architecture in general.

We then started the task which was that each participant should show the group a place in the school they disliked and describe why. We also ask that they mark it with a pink post-it and take a photo with a disposable camera. Once everyone had shown their spot this was done again but with positive spaces and green post-its. The children were free to mark any spot and go anywhere except into classrooms with running activities. The process turned out a little more chaotic with the full group walking to different places together and marking whatever they did or did not like in the building.

Once done with the tours and marking, we went back to the classroom and started to delve into the children's thoughts. We listed the good and bad features, things that the children wished for in their school and what kind of rooms are important. This was to be the basis for the next workshop.
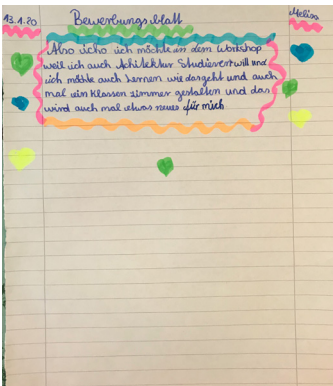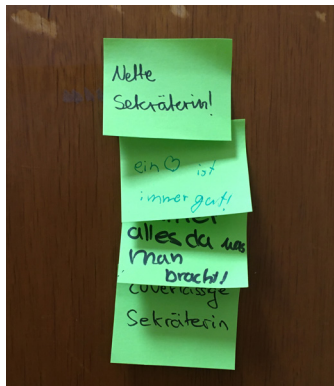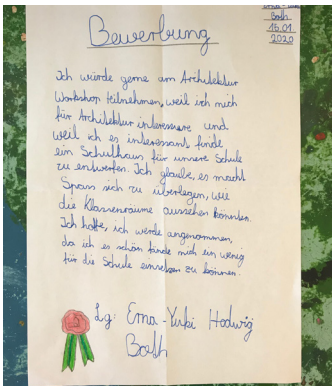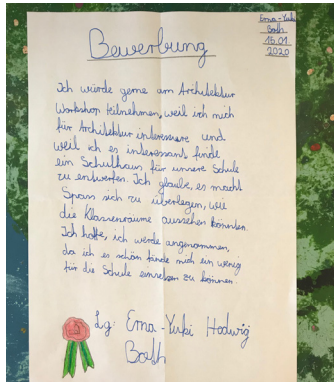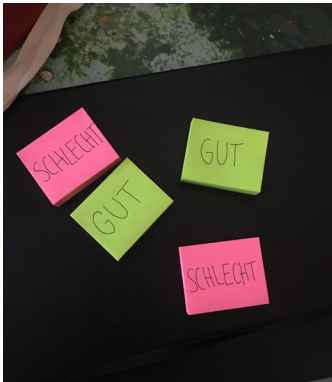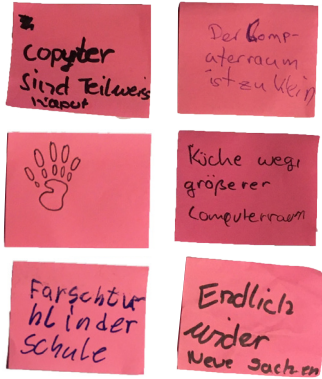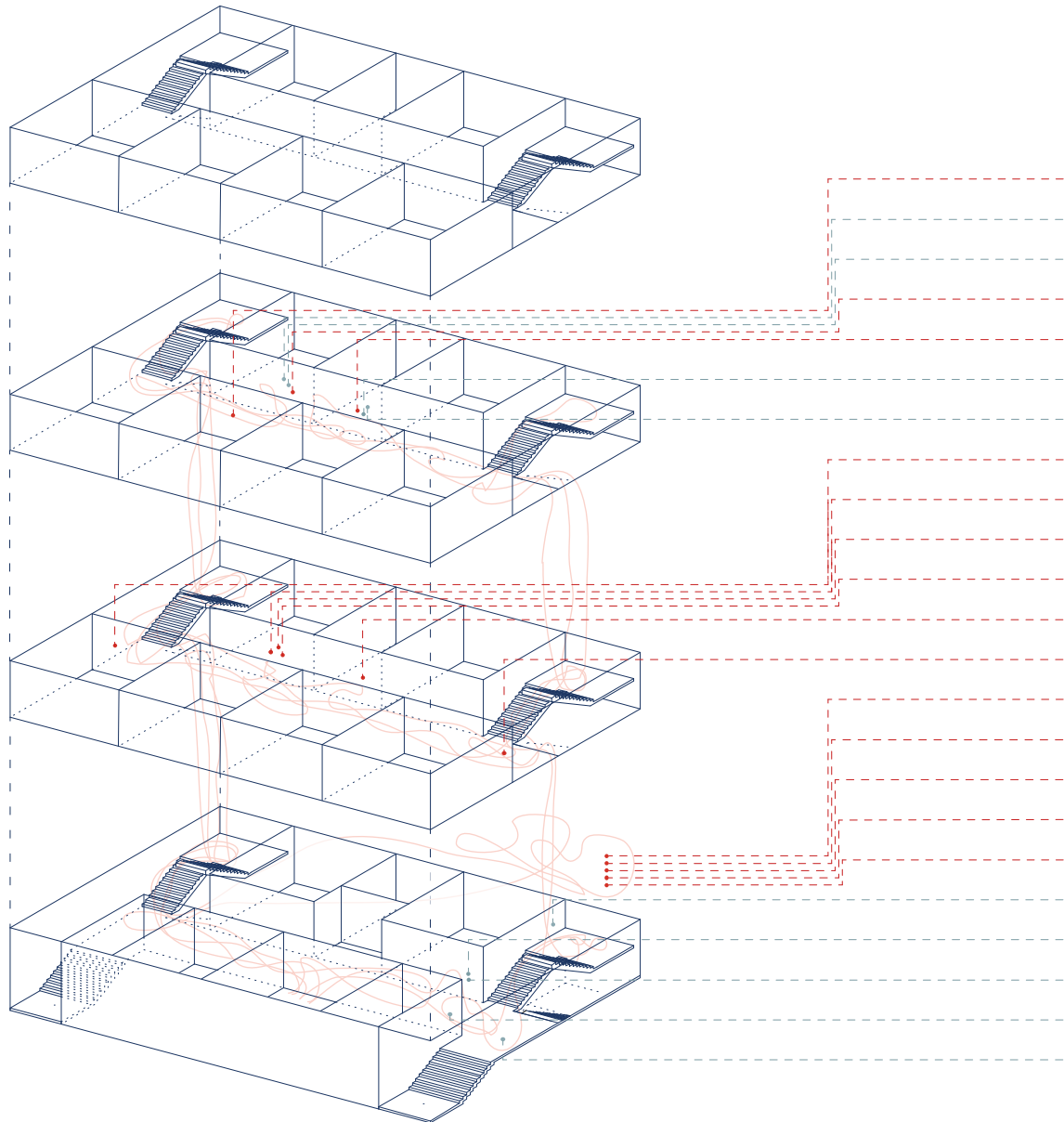
BAD

GOOD

To little books and space for books

Good

Good to have a library

Closed a lot

Bad

Space to relax

Good!

Paintings are old and non-symmetrical

Computers are old and to few

Its smells like cheese feet

Computer room is to small

Bad

Broken decoration

BAD - there are no swings

Furniture is old and broken

The football goals are to small
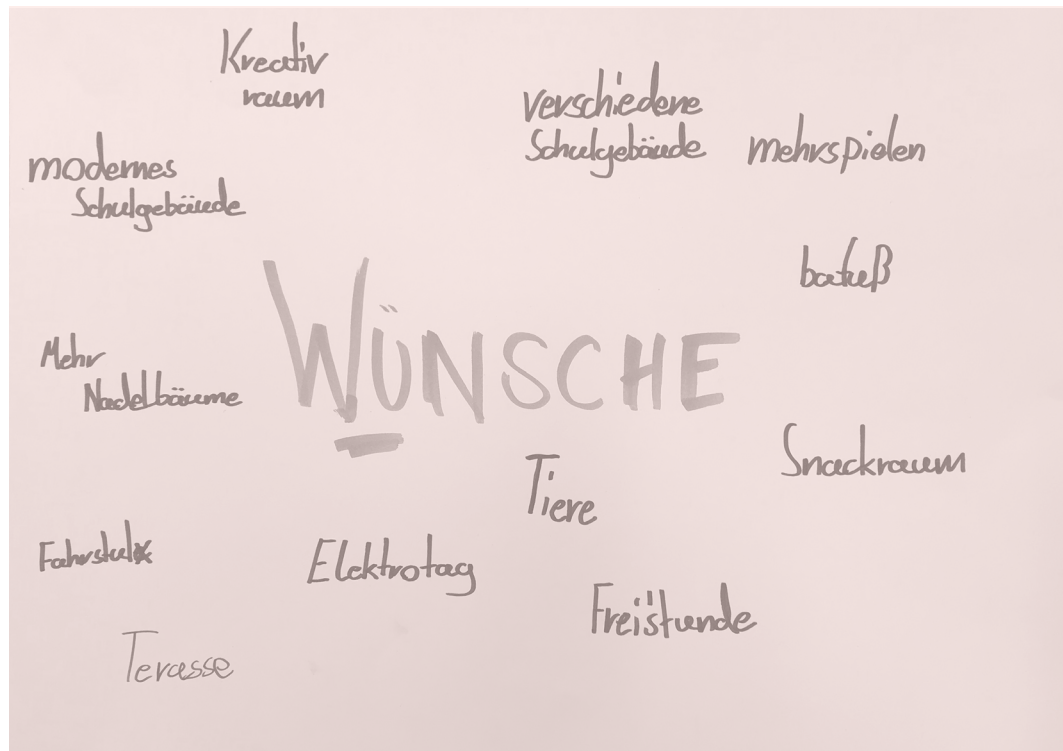
Need new benches

Sand is unnecessary

Plants

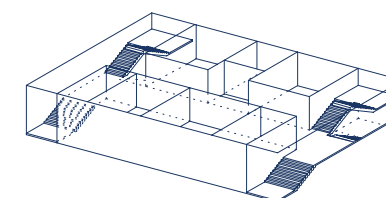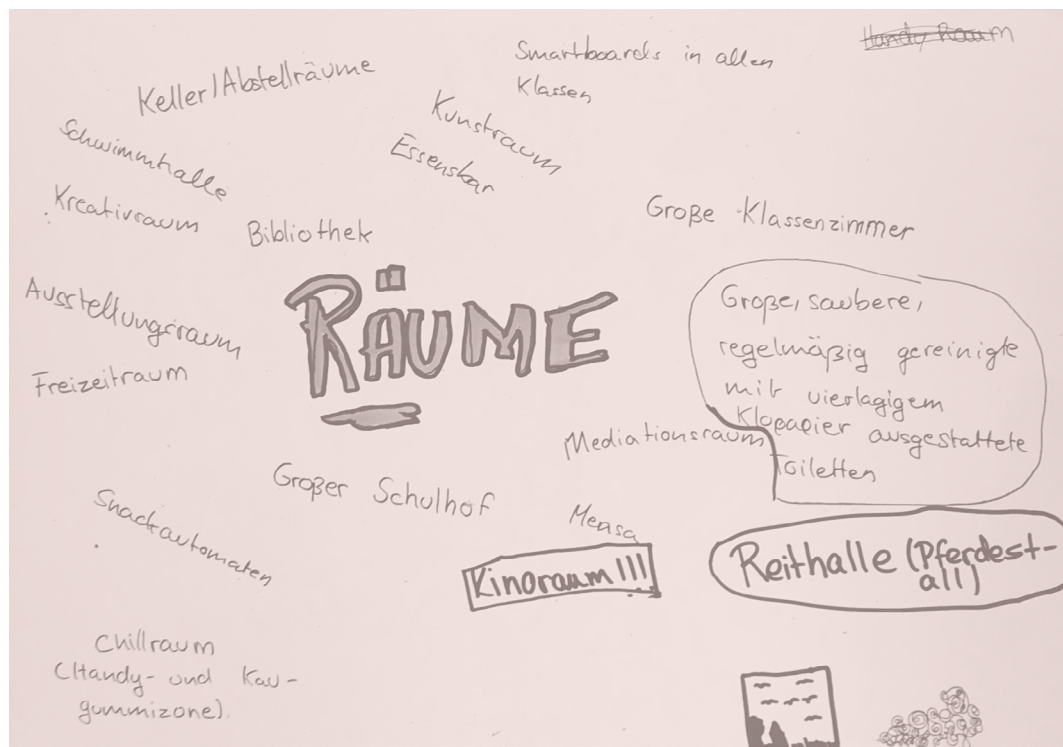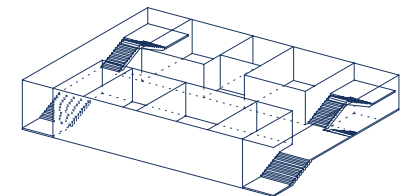Everything you need!

Really nice secretary / A ♥ for everyone

Informationboard is great!!

Heating is good

The Peter-Petersen-Shule with the notes and the paths the children made on their tour through school

Handwritten poster (German): Kreativraum · verschiedene Schulgebäude · mehr spielen · modernes Schulgebäude · **WÜNSCHE** · bakeß · Mehr Nadelbäume · Tiere · Snackraum · Fahrstuhl · Elektrotag · Freistunde · Terasse

WISHES

Food bar
Different and seperate buildings
Electronical day
Modern school building
Barefoot - no shoe policy
Terrace
More needle trees
More breaks
More play
Elevator
Snack automates
Smart boards in all class rooms

Handwritten poster (German): Keller/Abstellräume · Smartboards in allen Klassen · Handy Room · Kunstraum · Schwimmhalle · Essensbar · Kreativraum · Bibliothek · Große Klassenzimmer · Ausstellungsraum · **RÄUME** · Große, saubere, regelmäßig gereinigte mit vierlagigem Klopapier ausgestattete Toiletten · Freizeitraum · Mediationsraum · Großer Schulhof · Mensa · Snackautomaten · Kinoraum!!! · Reithalle (Pferdestall) · Chillraum (Handy- und Kaugummizone)

ROOMS & SPACES

Big classrooms
Mediation room
Cinema
Riding stables
Cafeteria
Library
Art room
Basement / Storage
Creative room
Snack room
Large school yard
Exhibition space
Inside space for breaks
Pool
Relaxing space
Phone & chewing gum corner
Proper and clean toilets
(with 4-layered toilet paper)

23. 01 Building imaginary schools

Seeing that the group is very motivated and rather interested in building models we decided to let them build different parts of the school. As an introduction we brought examples and references, we also talked about scale and answered questions about the cemetery where the new school will be built. We had also added rooms to the list the children made, rooms for teachers, functional rooms like kitchens and storage.

With three groups they split the most essential rooms between them:
Group 1: Library & toilets
Group 2: Swimming hall, creative room & classrooms
Group 3: Gym hall, auditorium & classrooms

They all started with a baseplate and pre-cut walls, most of them already with a clear picture of what the rooms should look like. The focus was on furniture and details, less on the spatial and rooms. Group 1 focused a lot on the toilets whereas group 2 started building rooms and made decisions on how to organise them.
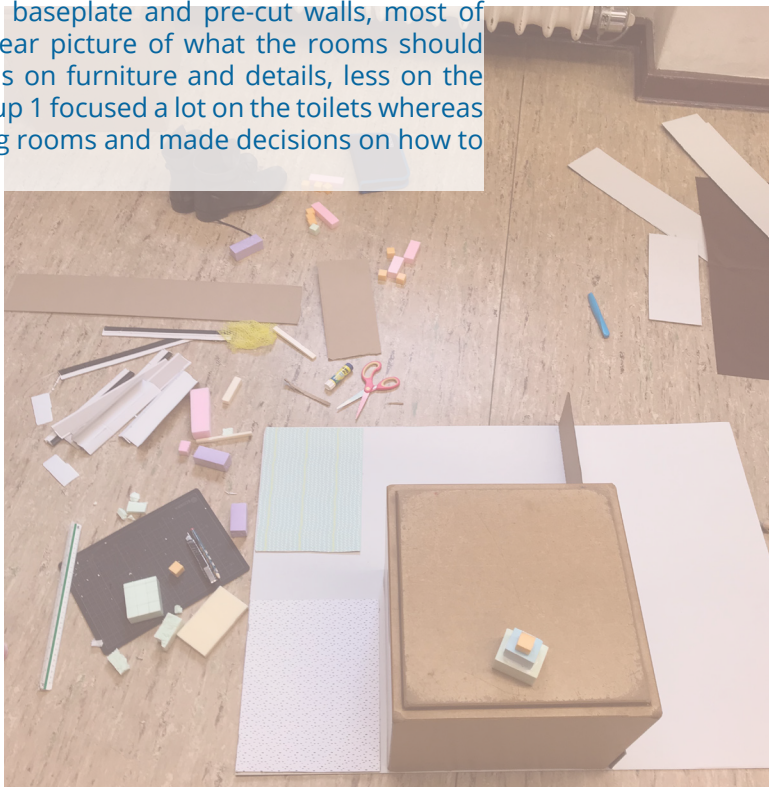
13. Building
02 imaginary
schools

The result

It was important that we didn't over-structure the workshops. When we noticed that the children were very interested and happy to build models, completely getting lost in the small details, we sort of just let them go. We decided to let them build on the schools for the length of 2.5 workshops and instead tried to help them with references, scale calculations and inspiration along the way.

In the end, just as with any architectural project, time was scarce and the models had to be finished quickly but we managed to put them together and talk about them as one building. In a circle we all described what we had liked and learned from the workshop and what the model could be used for. The reflections from the children were positive and they had enjoyed it, got a taste of what it means to be an architect and how complex a school building actually is.

The final 3 floors of the model included:
Group 1: Toilets, Relaxing room with a fountain, library with no shelves, books are in large heaps.
Group 2: Swimming pool, changing rooms, large hallways with lockers and classroom for a sport class.
Group 3: Gym hall, auditorium, entrance with information and a play hall.
Group 4: Classrooms with inspirational pizza and drinks.

Reflections

As seen in this chapter we conducted weekly participatory workshops with the children at the Peter-Petersen-Schule (PPS) during January 2020. In total we worked with about 90 children in different constellations and age groups. Each of the workshops brought us varying results and the differences between the groups of children were evident from the beginning, some groups were more involved and motivated, some were creative and extrovert and others were more reserved and hesitant. These characteristics were just as true for the groups as a whole as it was for the individuals in the group and it was one of the biggest surprises to us, not being used to work with children, that theses characteristics and the expectations on them were already very defined and present in such young children.

Thanks to all these differences we achieved a wide range of outcomes, all with incredible potential. To make it easier to document and for us to be able to remember all the incredible stories and worlds the children had created we asked each child to describe their work with 3 words that best illustrate the atmosphere and environment that it created. We asked them to do so for each collage and the shoe boxes and collected a very long list of words that actually give a close representation of what types of environments these children wish for. We have gathered images with their respective description in Appendix II and III, the originals were all hung up in the class rooms or exhibitioned in the school. One of the biggest differences we observed was the difference between the children of 6-8 years and the 9-11 year olds. While the younger children had no great difficulty in letting their imagination run wild and thinking of an ideal

school that was fun, a bit utopian and out of rules, the older children had several difficulties of stepping out of the conventional picture of what a school should be like. The workshops we did with the younger children were often just one lesson but with the older children we got to work with a smaller group of only 12 children during their so called workshop-time once a week. Part of the Jenaplan-method is that the children should have free work and choice of what they want to delve deeper into. At the PPS this is organised in workshops were the older children can choose from different themes and workshops to do every Thursday and ours was offered as one of them (along with circus gymnastics, arts, movie making etc).

From the very beginning this group was highly motivated and involved (especially since we discovered that ¾ of the parents are architects!) and all participants expressed several times the joy of having time to be creative, which they said they didn't do often at school. Despite this initial motivation, on several occasions we realised that the implicit rules imposed by the urban reality they live in had already defeated their imagination. The attempt to achieve a practical and realistic result often prevailed over their own fantasy and instead of a slightly crazy or imaginative, if even utopian, school we often found ourselves in front of a very realistic architectural model similar to ones we have made ourselves numerous times. This also made it clear that we had ourselves gone into the workshops with expectations and desires to step out of that very realistic and stylistic architectural model-making and view on a building. Except the fact that architects have to take building codes, engineering and high functionality into account we realised that we also often get stuck in reality and practicality of a building.

We asked ourselves how long does our mind remain open to our own imagination and to the possibilities of different realities and when does it conform to the system by accepting the rules as they are? And what is our role in participation, did we steer too little and should have pushed through these conventions and social constructions with different types of methods or workshops? The workshops were still really fun and interesting, if nothing else on a social and psychological level to see how fast children become pre-teens and how they are already trying to forge their own will and code of conduct within the framework that society and school has given them.

Even if we didn't build a complete utopian school model were the only way into the building is with a sling shot from the neighbouring roof with this group we still learned and realised a lot about ourselves, our role as architects and the immense impact the social, cultural and conventional expectations have on us all, and from an early age at that. The group gave us much of the realistic answers we then were able to convert into the room program in our translation but they also provoked us to start thinking more about how and to what extent children can be involved in the planning process of schools.

100 % of the asked teachers think it is important to involve children in th eplanning of schools

100 % of the asked teachers found the format suitable to ask children about their desires

Space, Bright rooms, no long corridors, clustered rooms, more work and communal space

-

expressed desires from the teachers

HIDING, COSY, SWINGING, JUMPING, SWIMMING, RELAXING, RELAXING, RELAXING, SKATING, PLAYING, PLAYING, EATING, EXPLORING, EXPLORING, BIRD WATCHING, BOUNCING, CLIMBING, OBSERVING, HIDING, SLIDING, SLEEPING, READING, ROAMING, SOFT, SUNNY, WARM, COLOURFUL, PROTECTED, COSY, LIGHT, SNOWY, QUIET, CALM, BLUE, PRETTY, HOT, CUDDLY, COOL, FUN, STORMY, TREE, STARS, BRIDGE, SOFT BED, SOFT BED, LADDER, CAVE, SALAMI PIZZA, MUSHROOM, FLOWERS, FOOD, FRIENDS, FAMILY, ROSE BED, TENT-SCHOOL, BOAT, TRAMPOLINE, HORSE, SLIDE, HOUSE, SWING, WHALE, TUNNEL, GRASS, FLOWER HOUSE, DINOSAUR, COCOON, SAND, TOWER, FIRE, POOL, RIVER, LAKE, STORM, SPACE, HOME, HOME, FOREST, WATER FALL, GARDEN, SKY, ICE, FIELD, HIDING, SLIDING, TREE, CAVE, LAKE, HIDING, WARM, CAVE, LAKE, SWIMMING, WARM, POOL, TUNNEL, SLEEPING, COSY, PRETTY, SLEEPING, HIDING, PROTECTED, COSY, COLOURFUL, SLIDE, HOUSE, SPACE, LAKE, POOL, COSY, QUIET, COLOURFUL, LIGHT, BRIDGE, COSY, HOME, OBSERVING, SUNNY, STARS, LADDER, HOME, STORM, RELAXING, WARM, TUNNEL, COSY, SLIDING, WARM, HIDING, RELAXING, PLAYING, SLIDING, TREE, SPACE, COSY, FRIENDS, HOME, FOOD, TUNNEL, SOFT, FRIENDS, LAKE, CAVE, RIVER, RELAXING, COSY, STARS, BRIDGE, TRAMPOLINE, SUNNY, HOME, FAMILY, FLOWERS, POOL, LIGHT, BRIDGE, PROTECTED, HOUSE, GARDEN, SKY, BLUE, GRASS, HORSE

Matrix of Learning
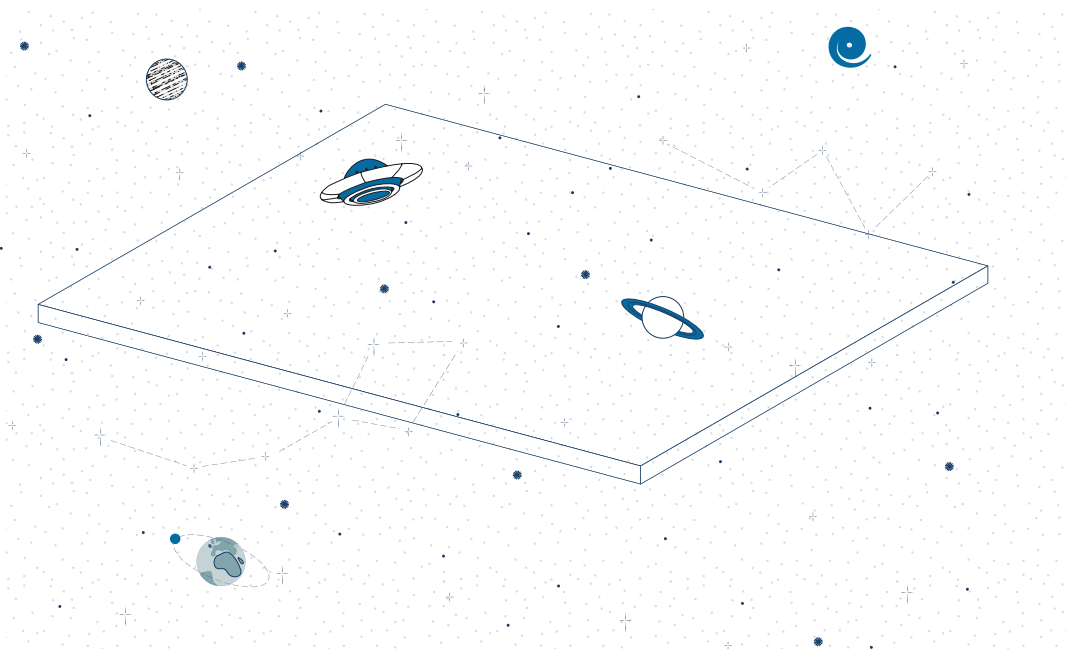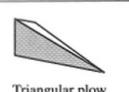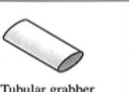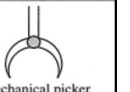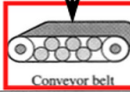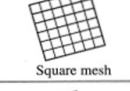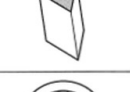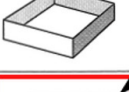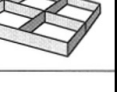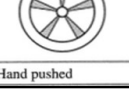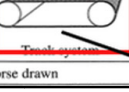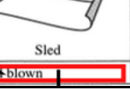
Matrix
-
(Mathematics)
collection of
numbers
arranged in
rows and
collumns.[75]

The workshops produced a tremendous amount of material and we needed to figure out a methodical way to handle all the results. We started sorting through the descriptive words the children had used to see what might be more predominate or important. This process formed 5 clear categories: movements, atmospheres, objects, nature and connections. Each of them are mostly derived from the results, although in some cases we added what we observed during the workshops and described in the children's presentations of their creations. We visualised all the words and categories and created a large chart - The **Learning Landscape Matrix.** (see next page for an image).

Even with the categories we started asking ourselves how do we translate it, or what can we do with the massive amount of materials the children gave us. The older children had given us a list of rooms or spaces they wanted and saw fit for a school. We wanted to develop something where we could use the spaces given and add on the different things that the young children had wished for. We started looking at different methods on how to create a concept and viable solution when you have many options or alternatives. We stumbled across a method most engineers use when they have to explore possible solutions to multi-dimensional and complex problems, the morphological analysis. This method tries to solve the issue by listing all the alternatives in different categories in a chart. Then you go through the table by choosing one component in each category, creating a concept or solution that might be more or less viable.

For example: simplified a car needs to fulfil the following functions; be powered, brake and contain people or load. For each of theses functions there are numerous alternatives and components and they are therefore listed under each function. While considering how you would like to construct your car, you go through each category (and of course theses categories are not as simple as an engine) and choose the type of engine, braking system and car frame you need. You end up with either one or more solutions that you can then keep working at.

Example of a morphological chart for a vegetable collection system [23]

We thought this was something we could use to narrow down and create concepts for different spaces in the school. We would take one of the rooms listed by the older kids and then go through our matrix and match it with movements, atmospheres and so on fit for the space. The 'problem' is that architecture is not engineering and one option seldom rules out others, architecture is much more about experience and multi-functionality than to find one or more viable solutions. Architecture is on many levels problem-solving but with this project is was never our main goal. We wanted to create a space and a tool with which children have the right to express their needs and desires for the buildings they spend time in. Further we wanted to steer away from the strict requirements and codes and leave a space open for imagination.

Our intention with the matrix was to find a way in which the younger children could mix their fantasy with the reality of a space (from the older kids list) while the older children could fill their real spaces with the fantasies things the younger had imagined. We realised we needed something much more tangible and hands on and decided to make the Matrix of Learning tridimensional.

movements

PLAYING · CLIMBING · SKATING · BOUNCING · HIDING · OBERSVING · JUMPING · COOKING · EATING · PAINTING

EXPLORING · SLIDING · SWIMMING · SLEEPING · SWINGING · WATCHING · CHILLING · INTERACTING · READING · PERFORMING

atmospheres
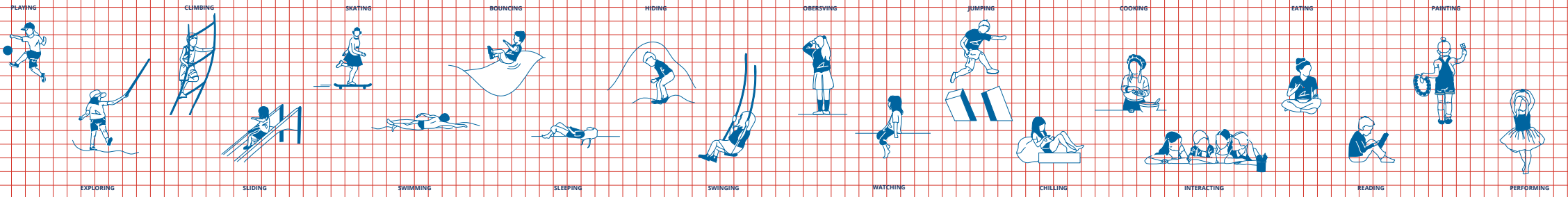
colorful · soft · safe · quiet · blue · calm · warm

loud · fun · cosy · cool · bright · cuddly · pretty · stormy

objects

nature

WATER FALL · GARDEN · LAKE · FIELD

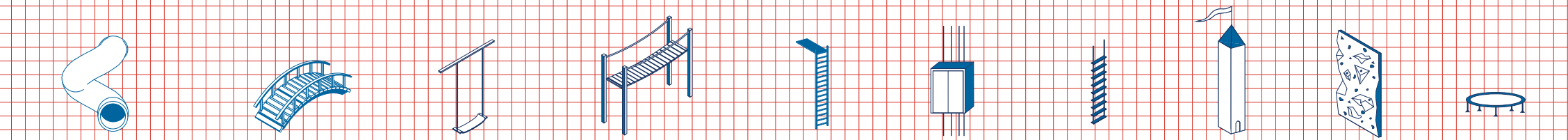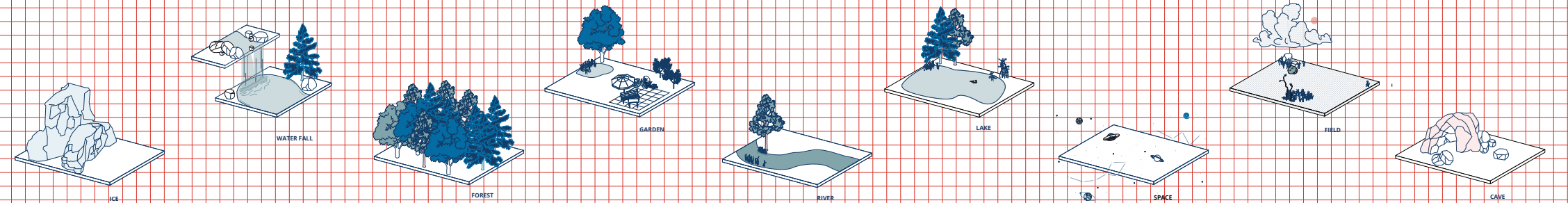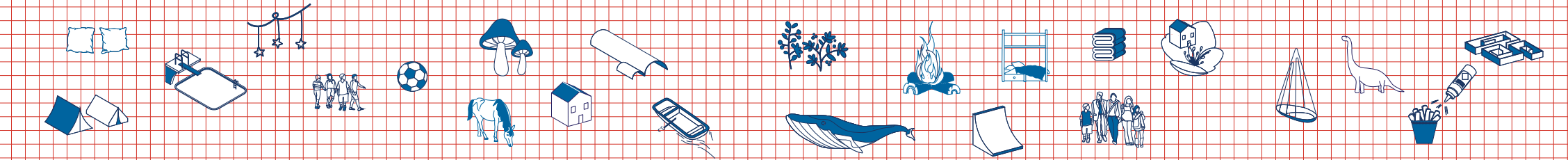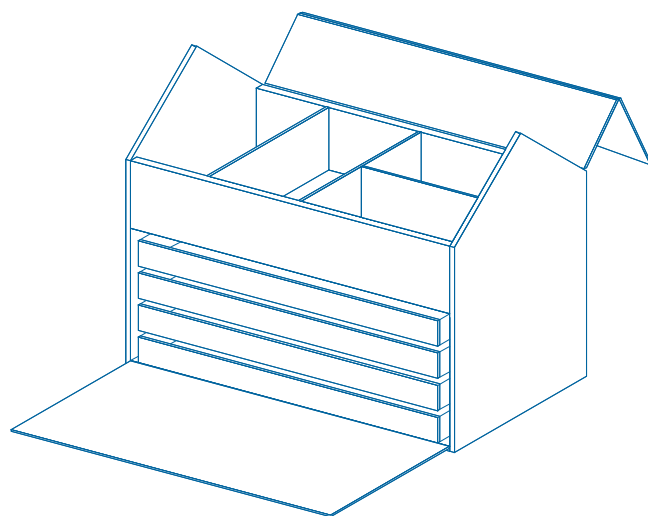ICE · FOREST · RIVER · SPACE · CAVE

connections

Fig 30 - Matrix of Learning, results from the participational workshops. See Appendix IV for full poster

ACTION

→

Learning Landscapes

It was important to us to not let all the answers and desires we collected from the children end up in a book, so we decided we needed to create something we could give back to the Peter-Petersen-Schule. Something they could actually use in a future planning process or just for fun as a game. The matrix of our results became our tool with which we tried to tell the outcomes of the workshops but we soon realised that it was too 'flat' to convey all the different atmospheres, feeling and fantasies the children had created and talked about.

As soon as we started making small tridimensional models we realised it is a medium that the children were very excited about, so why not use it in participation. Models make it easier to visualise space and how things are connected. Most people are not trained to read drawings but even young children can comprehend a spacial model. The other advantage of models is that you can keep it abstract enough to make sure that the fantasy of the participants can flow freely. At the same time a model makes it easy to imagine how the created atmospheres and spaces could be translated into rooms and buildings which also teaches the participants about the architectural design process. So we created the **Learning Landscape Toolbox.**

The toolbox is a game designed to involve the community in the process of designing a learning landscape. The decision not to use the term "school" is not accidental. During the design of this game we decided to distance ourselves as much as possible from the paradigms imposed

by the school directive both from a conceptual and from a constructive point of view. Not because we are against these paradigms, but rather to leave the participants the freedom to express their desires without being too influenced by preconceptions about school buildings. The toolbox is designed to be a key part in the early stages of the design process, not only Phase 0. We hope that it can be used by the architects, planners, users and other potential actors as a tool to develop the learning landscape during the initial design phases. With the game each participant can clearly express their wishes and hopes for the new building.

Contents

The contents of the box are; a deck of cards, cubes, sticks and platforms to create a structure, different objects and atmospheres to create the wishes for space, connections and nature to connect the different rooms. A closer description to the components and each category you will find below. All categories are based on the desires and imagination that emerged from the children's creations during the workshops held in January 2020.

Part of the rule book
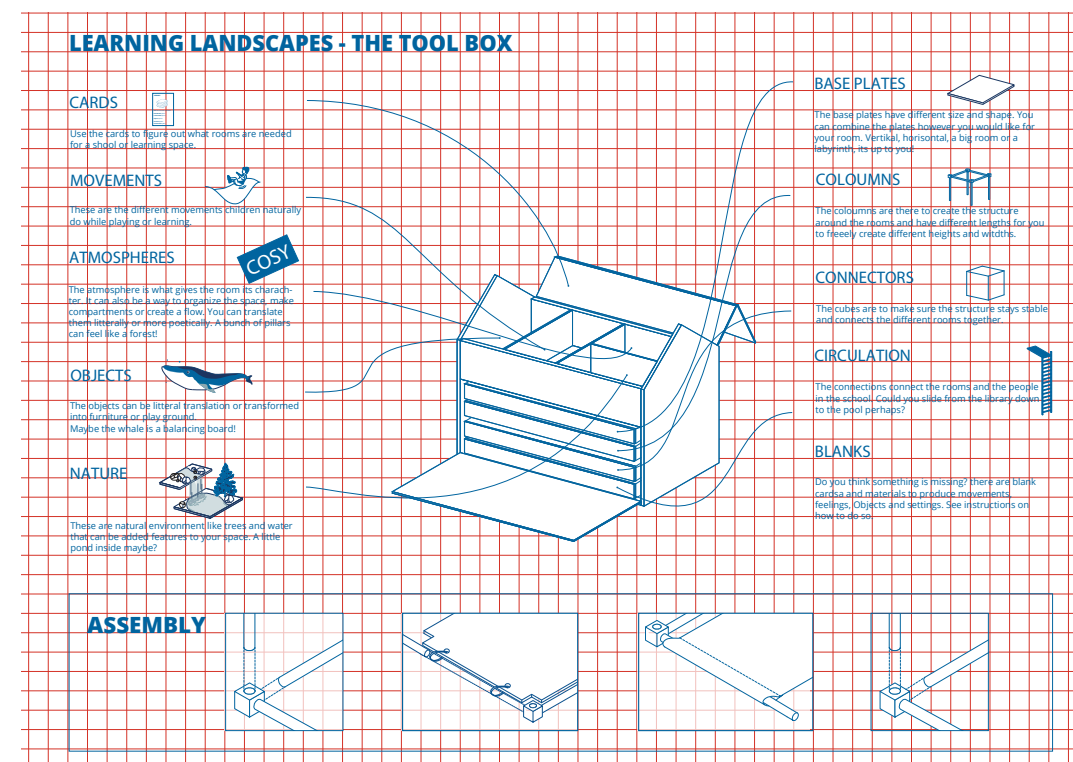
BIBLIOTHEK
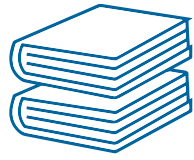
GRÖßE: 50m² bis 200m²

BEWEGUNG: 1 bis 4

ATMOSPHERE: 1 bis 4

OBJEKT: 1 bis 4

NATUR: frei wählbar

Welche verschiedenen Arten von Räumen sollten einbezogen werden?
Sollte dieser Raum für die Öffentlichkeit zugänglich sein?
Welche anderen Funktionen kann eine Bibliothek enthalten? (Computerraum, Mediathek, Ausstellungshalle, öffentliche Veranstaltungen...)

Cards

The deck of cards are based on the rooms and spaces that the children listed for a school and the add ons we know are needed 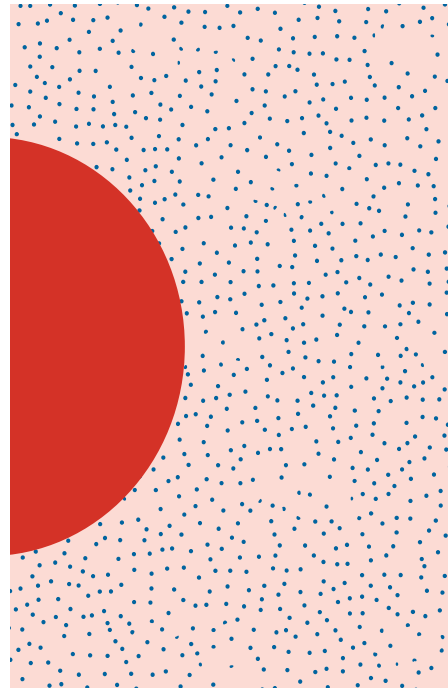in a building, even though it's important we have chosen to not include spaces like storage or other utilities to keep the game somewhat abstract. They can loosely be translated as the room program for the model and the excessive building of it. Before the group starts playing, the deck can be sorted or selected in a way that fits the project in question. On each card the specific room is indicated with a suggestion regarding the size needed for it. Below the size are the different categories of objects and atmospheres and a suggestion for how many of each can be used for the space.

Structure

To represent the notion of a building and to hold the different objects and atmospheres of the different spaces we have added a structural grid to the game. The choosing of a grid might seem contradictory to what we have been stating in our process, wanting the participational process to be completely open for the participant but after many trials we came to the conclusion that for this tridimensional game to be as open to interpretation as possible we needed a basic structural grid. We have been careful to keep it just that, a grid, and one flexible enough so that the person playing

the game has the freedom to create vertical, horizontal, open or closed spaces, regular or irregular but it stays stable and is easy to assemble.

The basic grid is based on a standard 5x5 m and scaled in 1:50 making it 10x10 cm in reality. We do not believe that the scale is an important factor for children or players in general, but it was important for us to maintain harmonic proportions and to keep a distant connection to reality. The connecting element, the wooden cube, is the only element that always maintains the same size. The 2x2 cm cube allows you to create both horizontal and vertical connections by plugging in sticks of different lengths, these sticks can be 5, 10, 20 or 30 cm depending on the spaces you want to create.

To create rooms or floors we decided to use platforms that you can hook onto sticks with metal rings. This gives the impression that the platforms are floating in the grid, in order to create a system that has spatial qualities whilst at the same time does not limit the freedom of the player. The standard platforms follow the grid size of 10x10 cm but we have also added platforms with other dimensions and shapes like triangular, quarter circles and the 'mega'-plattform to generate larger open spaces (it would correspond to about 100 m2 in reality) for a library, canteen or a gym. Theoretically there is no spatial limitation for the different rooms and environments, but we have given suggestions on each corresponding card based on our general knowledge and the new Berlin regulations for schools. The intention is not to impose limits but to maintain a connection with reality and the urban scale.
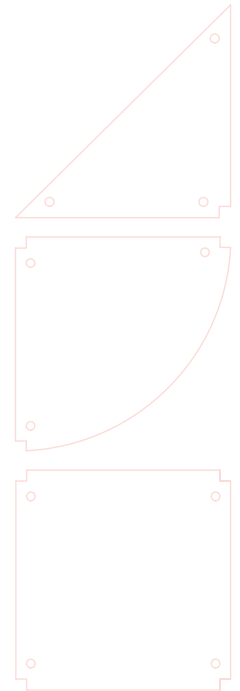
Movements

The first of the categories that the participant can choose items from are the 'Movements'. These are movements that we found are necessary for children and their learning in our research but also the movements that the children mentioned. We considered it essential that the participants think about what type of movement will primarily happen in each space and what they require when it comes to free space, furniture etc. The insertion of the movements and the silhouette representing them is not to be considered literal, the intention is above all to make players aware of the type of space needed based on the type of activity designed for the given environment. On the cards we gave an indicative number of movements based on the square meters of a room. For example, rooms like the gym hall have more movements than a music room.
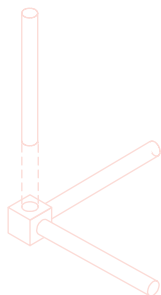
Atmospheres

During the workshops this category turned out to be one of the most important factors for the designs that the children did. For them it was an easy way to express their ideas and desires, describing their design with words like cosy, colourful or warm which also made it easier for us to understand what they were trying to express. It was soon clear to us that besides the furniture and objects in a room, the atmosphere is what is most important to the children and they describe it in a million different ways.

The mentioned words representing emotions, moods, atmospheric agents and sensations were all included in this category. We decided to translate these atmospheres into vertical dividers that can also be easily hooked onto the sticks where they are wanted. To make sure they fit in the structure, they all adhere to the basic dimensions of the grid but beyond that are the most colourful, fun, and unpredictable parts of the game and can be used according to the participants own personal interpretation.
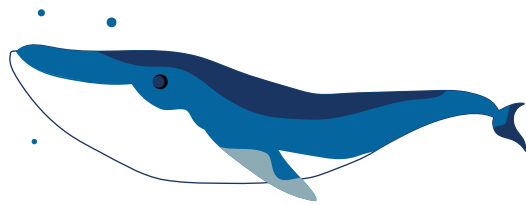
Objects

One of the other main categories are the objects. This category is a collection of all the things that the children built, drew, designed or described. We wanted to stay abstract and yet avoid the game becoming solely about interior design. Therefore we consciously decided not to include standard furniture like chairs and tables. Instead the objects are random, some from fantasy and some more literal, like animals, clouds, flowers, all which contribute to the creation of an environment and atmospheres with their different spatial characteristics. In order to achieve this effect, which can then help the architect to translate these desires into a concrete and feasible space, many of the objects are over-scaled or taken out of their original context.

Nature

We have grouped together a series of natural elements that can illustrate different scenarios including; trees, plants, watercourses, lakes, and meadows. Although this category is very important, both from an architectural and spatial point of view as well as an educational point of view, it is perhaps the most difficult one to represent and imagine in an urban

context. We hope however that, with their imagination, participants can create scenarios of urban oases in which both children and adults can take refuge, have some quiet time and/or learn about urban production of vegetables etc.
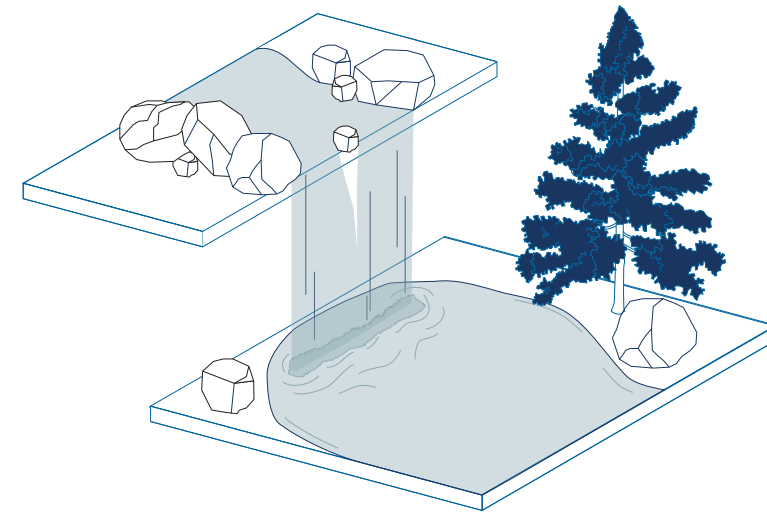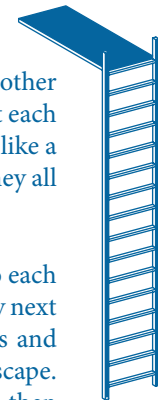
Connections

Every space needs to be connected in one way or another, to each other and/or to the outside world. The toolbox is designed in a way so that each participant or smaller group of participants creates a specific space, like a library or a classroom. Once everyone is finished with their space, they all need to be placed together or connected.

The full group can decide which rooms to place where in relation to each other or in relation to the outside. Some rooms can be placed directly next to each other and the platforms just hooked on to the same sticks and others can be stapled to create multiple floors in the learning landscape. This creates a spatial and conceptual hierarchy and the group can then add a system of vertical and horizontal connections depending on what they find necessary. It is also important to remember the connection to the surrounding community and neighbourhood: how do you get into the landscape, maybe a catapult on the neighbouring rooftop.

Once again, we have tried to maintain a connection to urban reality but keep the distance to regulations and codes as much as possible. That means that next to stairs and elevators we have also added slides, swings, lianas, ladders, trampolines and bridges in this category.

Report cards

We are well aware that this game will bring an abundance of input, descriptions and discussion, so much that the planning architect would either have to remove themselves completely from the creations to be able to take note of everything or rely on their memory. To make the documentation (and later translation into design) of each game easier we have added report cards. These cards can be filled out by each participant after the game, they can note what objects, atmospheres and nature they might have used and add their thoughts and feelings about it.
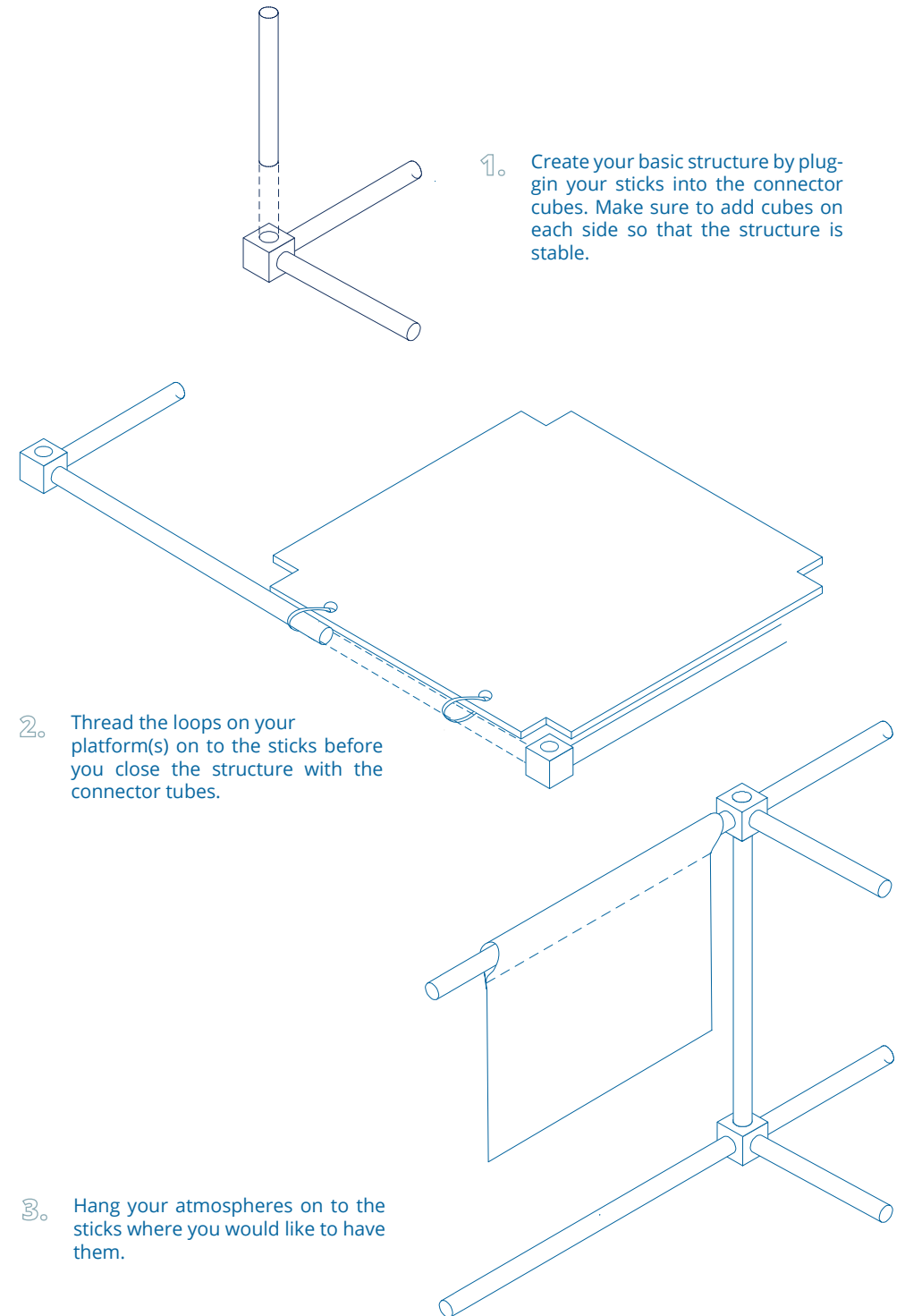
REPORT CARD

NAME:

RAUM:

DATUM:

GEWÄHLTER PARAMETER:

KOMMENTARE:

BEWEGUNGEN

ATMOSPHÄREN

OBJEKTE

NATUR

Blanks

No planning process is just like another, just like most contexts, surroundings and schools are like another. For this reason there are blanks in each category so that the game can be added to or adjusted according to the project it is being used for. There are two ways of adding: the first one is that the architects starts a longer process and conduct workshops with the children, we used collages and modelling but this could be up to the respective architect or organiser. The derivided results can be used to alter the game so it fits the specific group. The second way is that the participants themselves add to the game while playing with it. There are enough blanks in the box to draw or glue on to and the architects could potentially bring more materials if they wish to do so. We would recommend the first option seing you get to know the group and the specific context better. Furthermore there is time to reflect between the meetings. We have visualized this process in the next section - Planning Process

ASSEMBLY OF STRUCTURE

1. Create your basic structure by pluggin your sticks into the connector cubes. Make sure to add cubes on each side so that the structure is stable.

2. Thread the loops on your platform(s) on to the sticks before you close the structure with the connector tubes.

3. Hang your atmospheres on to the sticks where you would like to have them.

1 SHUFFLE

Go through the cards as a group and decide what's needed for your school. Good questions to ask could be the following:
How many classrooms will you be needing?
Are there any rooms that could be combined?
Can certain rooms serve multiple functions?

Once you have the deck that fits the group, shuffle the cards. Depending on the group and time, either each person picks one or more cards or smaller groups create spaces together.

2 CREATE

On your card you can see the listed things you need. Pick the different platforms you would like according to the room size and, if needed, columns and connector cubes. Pick the amount of movements, atmospheres, objects and natural settings you would like and are allowed.

With the material you've collected you can now construct your room/space and its atmosphere! It is all up to you, you can build it flat, as a labyrinth or maybe a tower. Can parts of the space be outside? Let your imagination go wild!

3 TETRIS

Once all rooms are built, they need to be connected to each other and the relationship between them needs to be decided. If needed, use the connector cubes and columns to create a structure with multiple stories. Good questions to ask could be the following:
Which rooms are good to have on which floors?
Are there rooms that could or should be accessible to the public? What actors could be involved in these spaces?
Are there other organisations in the neighbourhood that could use certain rooms in the school outside of school hours?
How can the different rooms be connected? Do you need a bridge or stairs to get from one to the other or are they directly connected?
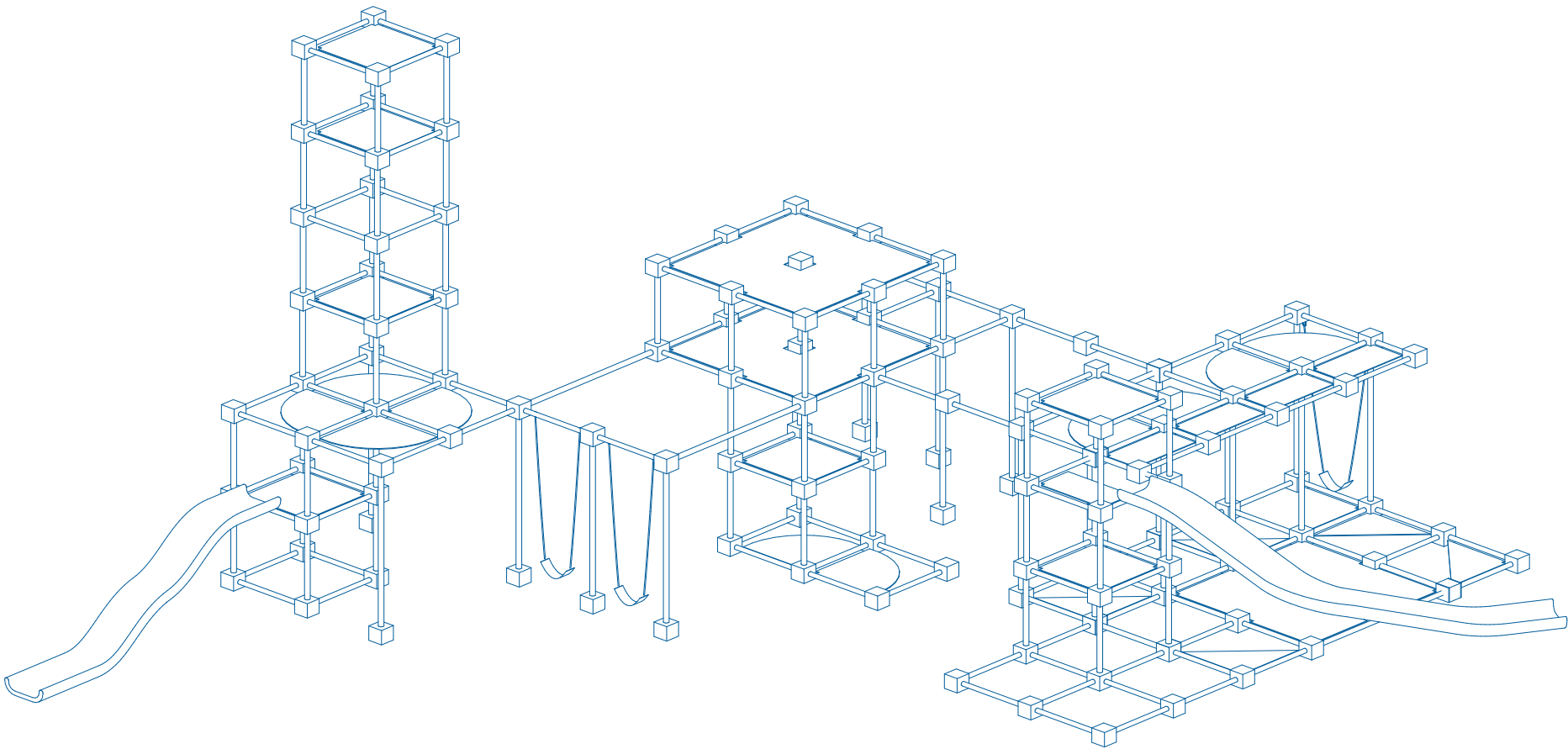
4 ARCHIVE

Now discuss the building as a whole, what is good, what doesn't really work. Are there connections missing? What would you change?

Each person/small group can also fill in a report card for their rooms and stamp the elements they chose for it. TAKE PHOTOGRAPHS & NOTES!

Example

Drawing of an example structure with platforms and connections

Collage

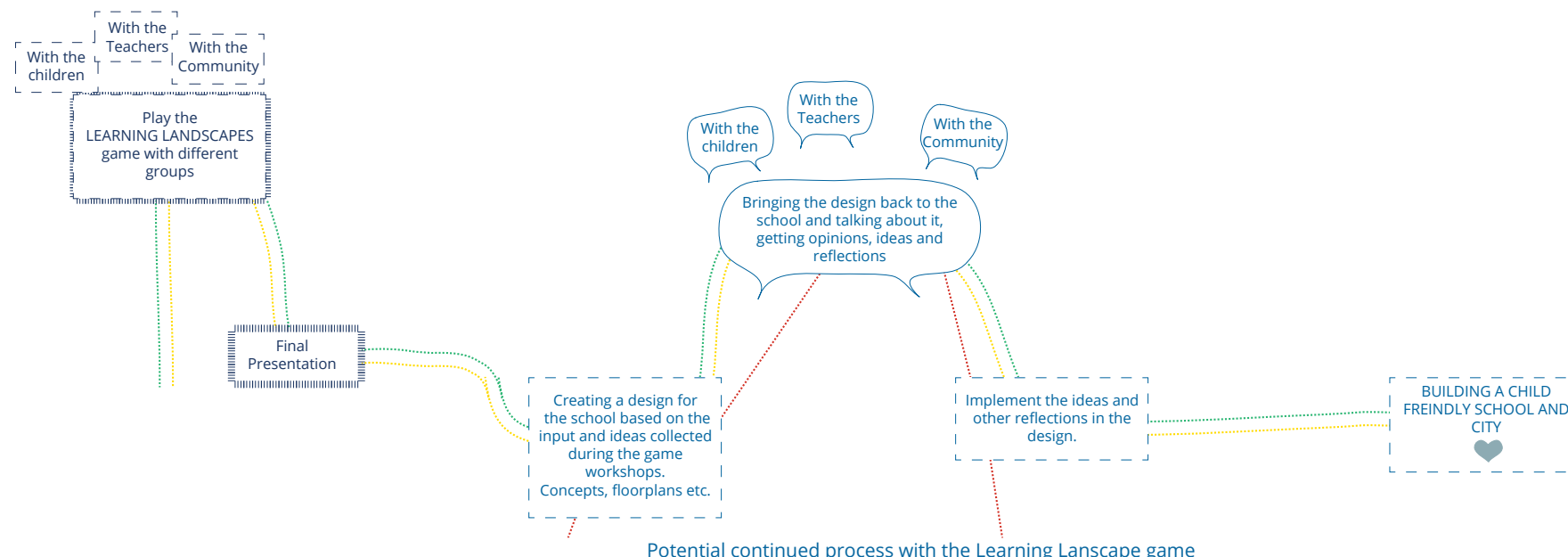Imaginative collage based on the game, see full image in Appendix VII

Collage

Imaginative collage based on the game, see full image in Appendix VIII

Planning Process

With the children

With the Teachers

With the Community

Play the LEARNING LANDSCAPES game with different groups

Final Presentation

With the children

With the Teachers

With the Community

Bringing the design back to the school and talking about it, getting opinions, ideas and reflections

Creating a design for the school based on the input and ideas collected during the game workshops. Concepts, floorplans etc.

Implement the ideas and other reflections in the design.

BUILDING A CHILD FREINDLY SCHOOL AND CITY

Potential continued process with the Learning Lanscape game

Everything we have discussed in this book so far was intended to highlight how systematic design in itself, is insufficient and needs to learn to acknowledge the uniqueness of each school's social context and how this influences the design of school buildings. In saying this however, the intent of schools, their users, and their role in society imply that there are certain fixed points and certain characteristics that distinguish these buildings from any other type of building. For this reason, from the very beginning, we believed that the process by which schools are designed had to have a new obligatory fixed point: participation.

In this book we have focused on how to start this process with the main users of school buildings: children. Whether you decide to organise participatory workshops or you decide to start directly using the learning landscape tool box game, we think that especially during the early stages of the process the focus should be on asking the children and the community around them what they want from their new school. This will allow both users and architects to broaden their horizons and to understand more deeply what the community expects from this new building.

The first sketches, plans and conceptual designs should be developed from these inputs. Furthermore, the new process, unlike the existing one in which participation ends after phase 0, foresees that the designers continue to come back to ask the community whether the initial design actually reflect their wishes. Through discussions, not only with the

children but also with school staff, parents and the surrounding community, it will be possible to find out what might need tweaking or still isn't completely clear. The professionals who are working on the design of the new building will be able to make necessary changes to the design that will, eventually, reflect what the users and the community expect.

Only at this point, after several discussions and corrections, will it be possible to continue with the following steps in the building process. The aim of all of this is clearly not to make the process linear and more streamlined, letting the community participate in the planning process isn't always easy and required patience and time.The question we think is necessary to ask at this point is: do we want to base our cities on the values of speed and functionalism, or do we want to take care of each other by making sure that every member of society feels like they belong and are a part of it?

REFLECTIONS
&
DISSCUSSION
→

Reflections

Through out a process, any process, the result or the desire to have a result is often very present. Our society has long been trained to see processes as a linear curve with a distinctive goal at the end. We have a hard time to see the process as a goal or a method and tend to focus on the end. Unfortunately we loose plenty of insight and knowledge on the way when we do so.

In architecture the obvious end goal is a building. The process to get there is a complex one with many different professional groups involved, clients with many ideas and plenty of codes and regulations to keep track of. These are all parameters that are of course important to a building and its success, but they are all part of the practical (and approval) planning of the building. When it comes to the early planning of the building, the analysing of the area, users and social function and potential flexibility or reuse it is often done by an urban planner or architect. They will do so with collected material (history, development, potential users etc) and in dialog with the client and in a fairly short period of time compared to the practical and concrete planning. This is were the education of architects and the reality of the profession are vastly different. Very imply put: at university we mainly focus on the planning of a building and with it, the impact it can have on its users and surroundings, its layout and functionality. The profession have to follow the building phases and are of course much more influenced by the economical and practical factors. And we are back were we started: is the education of architects sufficient? What is

the role of the architect? The answer will be very different depending on who you ask.

For us, our answers has become slightly clearer over the course of our thesis. We understand that the building sector is a huge with plenty of tradition, legal parameters and set ways and it and can't, and won't, change over night. But considering that our built environment has an immense impact on us and our cities, we need more focus on and importance to the early planning of buildings (and cities for that matter). It's not something that can not be done hastily if we want our cities and built surroundings to be sustainable, both for people and for our environment.In practice it means we believe that buildings have to be developed with its users and the surrounding community. Developing something with a larger group with many different interests is not easy and requires different methods, tool and most of all time and patience. Architects should be educated, or at least have the choice to be educated, to plan and facilitate the early planning process. Placing ourselves in the group and letting the process be a dialog and truly on eye-level will not only generate smarter and more capable architects but also a higher acceptance for new buildings and development in our cities.

No matter how methodical we would like the architectural planning process to be and how much we try and force it into a linear concept it mainly is not. Like most creative processes, it takes leaps in different directions and you have to stay focused on a very small percentage while keeping the other 98 % within reach and sight. That means that one of the biggest challenges is, to let us be led by this process and only steer loosely and where its necessary to push forward.

One of the nice experiences of this thesis was to actually go with the process and have the time to do so. To let go of the very strict framework we would usually apply to an early planning process was a challenge and it was an experience to realise where we should've steered more and where we managed to create a space were we could have an open dialog with children and teachers. We learned how that this process can be organised but also how much organisation and time it requires. It was a constant balancing between the 'easier' way out in making our own 'professional' decisions and letting the users, as experts in their own right, take decisions.

We quickly figured out that children at a fairly young age are very capable of making decisions about their built environment. The group of 10-11 year olds had clear and realistic images of what a school should and could look like. It was also a slightly eye-opening encounter to work with the older group of children, we realised that we all have plenty of social conventions implanted on us at a very young age and express them. This group built very realistic and traditional school models but were also very reflected, could easily point out the positive and negative aspects of their own school building and the one they built as a model. We could've

surely developed a complete design with them if we would have had more time. If we were to do these workshops again, this is a group were we should probably stuck a little more to our original program, forced them out to their comfort zone more and tried to break those conventions of what a school or a classroom is. The imagination of the younger children is what brought us to our game and our results. It's what made us much more open to a landscape rather than a building. They have an immense knowledge and are not to be forgotten in the development of a school. Our research showed that play of different kinds are very important and the kids talked about and created worlds and rooms where all of those kinds of play AND learning could take place. All while not being a square classroom with bleak beige walls.

Of course the ultimate goal would be to see the game used in a planning process. We truly believe it would be a great way to talk about architecture and atmospheric space with children of different ages. It is complex enough to intrigue children, make it a challenge while also teaching them about the different aspects of a building. The game is also a great way to just get closer to the users, both adults and children. During a game people relax and feel more comfortable expressing their desires, something most children are much more comfortable with than adults. We are looking forward to play it with the children at the Peter-Petersen-Schule.

We might have set out with a different goal than were we ended up but are very pleased with our process and results. During this thesis we learned it is important to have fun during the process, it instantly shows in the results, especially when working with people and in this case kids. Just as important as it is to keep questioning the process and be open for suggestions from anyone, not only 'professionals'. It has been an adventure to let us be steered by the process and to have the time to let that happen. Like most things in life it has been uncertain at times and has stayed steadily unpredictable.

NOTES
&
IMPRESSUM

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Notes

1. https://population.un.org/wup/ (visited 31.03.2020)
2. Hargrave et al., 2019
3. https://www.berlin.de/sen/finanzen/haushalt/schulbauoffensive/artikel.613867.php (visited 31.03.2020)
4. Lewin, 1946
5. MacDonald, 2012, p. 34
6. Streubert & Carpenter, 1995
7. Wadsworth, 1998
8. Attwood, 1997
9. Krysiak, 2017, p. 13
10. Hargrave et al., 2019, p. 11
11. Chudacoff 2007, Gray 2011
12. Hargrave et al., 2019, p. 11
13. https://www.theatlantic.com/education/archive/2016/05/why-young-kids-learn-through-movement/483408/ (visited 03.03.2020)
14. Hargrave et al., 2019
15. https://www.encourageplay.com/blog/16-different-types-of-play (visited on 08.03.2020)
16. Krysiak, 2017
17. Krysiak, 2017 & Krishnamurthy et al., 2018
18. https://dictionary.cambridge.org/dictionary/english/participation (visited 31.03.2020)
19. Albrecht, 1984, p. 24 & https://www.spatialagency.net/database/participation.1970s (visited 22.03.2020)
20. Langrish, 2016
21. Hoffman, 2014, p.12
22. https://www.spatialagency.net/database/giancarlo.de.carlo
    https://architectureandeducation.org/2018/06/28/giancarlo-de-carlo-how-to-keep-educational-architecture-human-or-creative-anti-institutionalism/ (visited 31.03.2020)
23. Blundell-Jones et al., 2005
24. Bundell-Jones et al., 2005
25. Bundell-Jones et al., 2005
26. Bundell-Jones et al., 2005
27. Till, 2006
28. Till, 2006
29. Till, 2006 & Hill, p.36
30. Hofmann, 2014
31. Hofmann, 2014
32. Hofmann, 2014, p. 15
33. Hofmann, 2014, p. 8
34. Hofmann, 2014, p. 15
35. Montag Stiftung, 2019, p 201

36. Montag Stiftung, 2019
37. Montag stiftung, 2019, p 201
38. Clark, C, 2006, p. 132
39. Clark, 2006
40. Clark, 2006, p. 331-332
41. https://www.bpb.de/gesellschaft/bildung/zukunft-bildung/229629/schulgeschichte-bis-1945 (visited 8.03.2020)
42. Clark, 2006, p. 331-332
    https://www.psychologytoday.com/us/blog/freedom-learn/200808/brief-history-education (visited 8.03.2020)
43. Robinson, 2015, p. 35
44. Robinson, 2015, p. 37
45. https://www.psychologytoday.com/us/blog/freedom-learn/200808/brief-history-education (visited 8.03.2020)
46. Montag Stiftung, 2019, p. 25, 27-29
47. Montag Stiftung, 2019, p. 104, 112, 124, 126-127
48. https://www.statistik-berlin-brandenburg.de/BasisZeitreiheGrafik/Bas-Schulen.asp?Ptyp=300&Sageb=21001&creg=BBB&anzwer=5 (visited 31.03.2020)
49. https://www.rbb24.de/politik/beitrag/2019/09/schimmel-schulen-berlin-modularer-ergaenzungsbau.html (visited 31.03.2020)
    https://www.morgenpost.de/berlin/article227938809/Aerger-um-Schul-Container-Ergaenzungsbau-fuenf-Meter-zu-lang.html (visited 31.03.2020)
50. https://www.berlin.de/sen/finanzen/haushalt/schulbauoffensive/artikel.613867.php (visited 31.03.2020)
51. Berlin baut Bildung, 2017, p. 14
52. https://www.tagesspiegel.de/berlin/schulbauoffensive-in-berlin-so-sehen-die-neuen-berliner-schulen-aus/23929420.html (visited 31.03.2020)
53. https://www.konstruktiver-holzbau.de/2019/10/31/schnelle-holzmodulbauweise-sorgt-fuer-berliner-schulneubauten/ (visited on 31.03.2020)
54. https://www.berlin.de/sen/finanzen/haushalt/schulbauoffensive/artikel.613867.php (visited 31.03.2020)
55. https://www.morgenpost.de/berlin/article225921789/Mitgestaltung-beim-Schulneubau-wirklich-erwuenscht.html (visited 31.03.2020)
    Berlin baut Bildung, 2017
    Partizipation im Schulbau, 2019
56. https://www.tagesspiegel.de/berlin/kiezreport-neukoelln-bezirk-der-extreme/1764120.html (visited 31.03.2020)
57. https://de.wikipedia.org/wiki/Bezirk_Neuk%C3%B6lln

ln (visited 31.03.2020)
58. Ladd, 1997, p. 97 & https://de.wikipedia.org/wiki/Bezirk_Neuk%C3%B6lln
59. https://de.wikipedia.org/wiki/Bezirk_Neuk%C3%B6lln (visited 31.03.2020)
60. https://www.tagesspiegel.de/berlin/kiezreport-neukoelln-bezirk-der-extreme/1764120.html (visited 31.03.2020)
61. https://de.wikipedia.org/wiki/Bezirk_Neuk%C3%B6lln (visited 31.03.2020)
62. https://www.tagesspiegel.de/berlin/stadtentwicklung-neues-leben-fuer-die-berliner-friedhoefe/23155974.html (visited 31.03.2020)
63. IFEK, 2015
64. https://www.morgenpost.de/berlin/article216730429/In-Neukoelln-gibt-es-bald-Gruenkohl-vom-Friedhof.html (visited 31.03.2020)
65. https://www.berlin.de/senuvk/umwelt/stadtgruen/friedhoefe_begraebnisstaetten/de/daten_fakten/index.shtml (visited on 31.03.2020)
66. IFEK, 2015
    https://www.berlin.de/sen/finanzen/haushalt/schulbauoffensive/artikel.613867.php (visited 31.03.2020)
67. https://pps-berlin.de/jenaplan/ (visited 31.03.2020)
68. https://www.berlin.de/sen/bildung/schule/berliner-schulen/schulverzeichnis/Schulportrait.aspx?ID-Schulzweig=20985 (visited 31.03.2020)
69. https://pps-berlin.de/schulspezifische-rahmenbedingungen/schulprofil/ (visited 31.03.2020)
70. http://jenaplan.de/geschichte-der-universitaetsschule-jena/ (visited 31.03.2020)
71. https://pps-berlin.de/jenaplan/ (visited 31.03.2020)
72. http://jenaplan.de/kurzfassung-der-jenaplan-paedagogik/ (visited 31.03.2020)
73. http://jenaplan.de/kurzfassung-der-jenaplan-paedagogik/ (visited 31.03.2020) (quotation: aus Kluge 1992, S. 153; dort zit. n.: Ada Weinel, in: Kindergarten, 1926, S. 265)
74. Krysiak, 2017
75. https://en.wikipedia.org/wiki/Matrix_(mathematics) (visited on 31.03.2020)

Image index

All images and drawings except the below listed have been produced and created by the authors.

1. Playground Schillekiez ca 1970s - https://www.neukoellner.net/wp-content/uploads/2016/03/Spielplatz_schiller-400x240.jpg

2. Fuji Kindergarten - http://landezine.com/wp-content/uploads/2009/07/0213.jpg

3. Red planet Playground Shanghai - https://visuall.net/2018/03/19/the-red-planet-kids-playground-in-shanghai-by-100-architects/

4. Playground Amsterdam - https://afilii.com/en/wp-content/uploads/sites/3/2018/08/urban-play-ground-play-space-Potgieterstraat-Amsterdam-by-carve_2-1024x661.jpg

5. https://img.blogs.es/smartcitylab/wp-content/uploads/2019/11/Francesco-Tonucci-ciudad-ninos.jpg

6. Byker Wall, residential housing by Ralph Erskine, 1970s, Newscaslte opon Tyne, England - https://images.squarespace-cdn.com/content/v1/56e-0a9351d07c05cc24af31b/1498902307015-FD-M2JDOFXY79CSC75VQW/ke17ZwdGBToddI8pDm48kL3VKmwKI3leYB51VJjL-FB8UqsxRUqqbr1mOJYKfIPR7LoDQ9mXPOjoJoqy-81S2I8N_N4V1vUb5AoIIIbLZhVYxCRW4BPu10St-3TBAUQYVKcgK5SGg9Ovb1yloBBOHcruw_mYL-fAhRzzgArFCB07Dw0L8n4Jypuo E5Tg6Wg5Oy-vs/06-02-09+Byker+Wall+02.jpg?format=1500w

7. La Mémé - Student housing built with participation by Lucien Kroll, 1976, Brussels - https://www.spatialagency.net/2012/07/12/meme1-960x648.jpg

8. Jona Friedman, Mein Fribel, 1974

9. Pop-up studio conducting a participation-based research and design project, Cloud architects, London - https://images.adsttc.com/media/images/539b/a245/c07a/805c/ea00/084b/large_jpg/14225811490_6a25f-0385f_b.jpg?1402708542

10. Making Futures school, a two-week workshop in the Haus der Statistik by Raumlabor, Berlin - http://raumlabor.net/wp-content/uploads/2020/02/IMG0875.jpg

11. Kindergarten Taka Tuka Land by Baupiloten, Berlin - https://www.archdaily.com/519/taka-tuka-land-bau-piloten/500ebdaa28ba0d0cc700014d-ta-ka-tuka-land-baupiloten-image

12. Carl Bolle Grundschule, renovation with participation by Baupiloten, 2012, Berlin - https://www.designboom.com/cms/images/playgrounds/carl07.jpg

13. Cork pixel wall, part of the project Outside The Box by Tali Buchler, Zichron Yaakov, Israel [12] - https://images.squarespace-cdn.com/content/v1/57e8f925579fb3ccde2b1849/1475759127625-A-PIKS0FW2EKB5IZ62JUA/ke17ZwdGBToddI8pD-m48kBpuD7IDYAl_XjLnVs7muDAUqsxRUqqbr-1mOJYKfIPR7LoDQ9mXPOjoJoqy81S2I8N_N4V-1vUb5AoIIIbLZhVYy7Mythp_T-mtop-vrsUOmeInPi-9iDjx9w8K4ZfjXt2drR6bgNYAZ6G4NOxuu7XjzvwO-qyvDP84oxlDgR_lgVP8MW9u6oXQZQicHHG1WE-E6fg/cork+wall.jpg?format=2500w

14. Children in a classroom around 1930 - https://s3.amazonaws.com/audreywatters/factory_counting.jpg

15. Bildungshaus Westpark in Augsburg, Germany - https://www.baunetzwissen.de/imgs/1/4/0/2/0/0/3/a54075bc0444dac9.jpg

16. Elementary & Middle school in Kuhmo, Finland - https://images.adsttc.com/media/images/5bc7/9008/f197/cc6b/2200/01d7/slideshow/classroom_01.jpg?1539805182

17. IJBurg Collage in Amsterdam, The Netherlands - https://vepa.nl/wp-content/uploads/2015/04/IJburg-College-Amsterdam-ruimte-zwart-hok.jpg

18. Bobergsskolan in Stockholm, Sweden - https://images.adsttc.com/media/images/5de9/7755/3312/fd9f/fd00/056f/slideshow/Bobergsskolan_-_Fotograf_Mattias_Hamren-1.jpg?1575581513

19. Integrated Secondary School, modular building in timber completed in 2019, Berlin-Mahlsdorf - https://images.adsttc.com/media/images/5d7c/15d9/284d/d1bd/2800/035b/slideshow/171BG20190803D0054.jpg?1568413102

20. After school center on Campus Rutli in Berlin-Neukölln - https://lh3.googleusercontent.com/proxy/mnNaMrBKaA-JdejYFFfL-sMwdOZjhaCmYU-cryBTC-d4CkU_2HCEXwYbL-bY2ZwWyIdRgSd-vpMr7Wf7e7PvbQiM3p0G6mR3S0-GCtwITPPn_mUU_bSRU

21. Air image of Neue St. Jacobi - St. Jacobi-Friedhof - Google Maps

22. The partitioning of the Neue St. Jacobi according to the IFEK - Integriertes Friedhofsentwicklungskonzept (IFEK) - Friedhöfe Hermannstraße Berlin-Neukölln,

23. The 'pre-design' released by HOWOGE in November 2019 - HOWOGE Konzeptstudie St. Jacobi-Friedhof, 2019

24. https://images.saatchiart.com/saatchi/58820/art/4017159/3087013-QOEULSPM-7.jpg

25. Hofmann, 2014, p. HITTA SIDO NUMMER!!

26. https://lh6.googleusercontent.com/-PROajBzALng/UP2e3T6TxKI/AAAAAAAABzs/4de0fOKKBN4/s640/blogger-image-517407475.jpg

27. https://www.baby-und-familie.de/multimedia/47/293/246/26104135697.jpg

28. https://bloximages.newyork1.vip.townnews.com/santafenewmexican.com/content/tncms/assets/v3/editorial/a/c8/ac8ed24e-2c58-5124-b1c4-c78c151d7b-4d/53e22b8ef3e45.image.jpg?resize=1200%2C882

29. https://i.pinimg.com/originals/ee/50/54/ee-50545114da90ef9ffb60bc386f60f2.jpg

30. Hofmann, 2014, p. HITTA SIDONUMMER

31. https://www.simplemost.com/wp-content/uploads/2019/02/AdobeStock_89369250-e1551900484756.jpeg

32. https://dynamicmedia.zuza.com/zz/m/original_/9/b/9b3edd2f-152f-4d66-bd9e-54dd72299a76/DZ_sensorypaths_02___Super_Portrait.jpg

33. https://pbs.twimg.com/media/Cd12qrBXEAE6OoF.jpg

34. https://images.hdsydsvenskan.se/980x588/bKb_HzRddbY8pHMu7z-BS1BFP_M.jpg'

35. https://lh3.googleusercontent.com/proxy/NWhc0Y-DB9Rxs81wggyw8gf9J1HsM7kJOEeMs-f-RtGa-7gHIxuTwyqid_BK5JK6FLb609ZcIlV5AHbdHY0w-G3tvIEmGXyg-eQDrWv9I9YrqewY-sVolfWvDsbMxw

36. Example of a morphological chart for a vegetable collection system - http://4.bp.blogspot.com/-y8p-QLA_he2U/VjQpYOJpT2I/AAAAAAAAADk/3AZu-ZE4mmSE/s1600/Figure%2B2.png

References

Literature

Albrecht, Johann, *Towards a Theory of Participation in Architecture: An Examination of Humanistic Planning Theories,* Journal of Architectural Education (1984-) 42, no. 1 (1988): 24-31. Accessed March 14, 2020. doi:10.2307/1424997

Attwood, H. (1997). *An overview of issues around the use of participatory approaches by post-graduate students,* In IDS, Participatory Research, IDS PRATopic Pack, 1997, Brighton: IDS, University of Sussex.

Blundell-Jones, Peter & Petrescu, Doina & Till, Jeremy, *Architecture and Participation*, 2005, Taylor & Francis, Abingdon-on-Thames

Burckhardt, Lucius, *Die Kinder fressen ihre Revolution,* 1985, DuMont Buchverlag, Köln

Busá et al. *Bauen für Kinder*, 2006, Karl Krämer Verlag, Stuttgart+Zürich

Capresi, Vittoria & Pampe, Barbara, *learn move play ground - how to import playgrounds through participation*, 2013, jovis Verlag, Berlin

Danenberg, Rosa & Doumpa, Vivian & Karssenberg, Hans, *The City at Eye Level for Kids*, 2018, STIPO Publishing, Rotterdam / Amsterdam

Dudek, Mark, *Children's Spaces*, 2005, Architectural Press, Oxford

Faga, Barbara, *Designing public consensus*, 2006, John Wiley & Sons, Hoboken

Friedman, Yona, *Meine Fibel : wie die Stadtbewohner ihr Häuser und Städte selber planen können,* 1974, Bertelsmann, Düsseldorf

Ferguson, Francesca & Make_Shift, *Make City*, a Compendium of Urban Alternatives, 2019, jovial Verlag Berlin

Hargrave, Josef & Williams, Samuel & Wright, Hannah & zu Dohna, Felicitas, *Cities Alive - Designing for urban childhoods*, 2017, Arup, London

Hill, Jonathan, *Occupying Architecture*, 2005, Routledge, New York

Hofmann, Susanne, *Partizipation macht Architektur*, 2014, Jogis Verlag, Berlin

Hübner, Peter, *Kinder bauen ihre Schule*, 2005, Edition Axel Menges, Stuttgart / London

Karsten, Lia & Willem van Vliet--, *Children in the City: Reclaiming the Street*, (2006) Children, Youth and Environments 16(1): 151-167. Retrieved from https://www.researchgate.net/publication/254897061_Children_in_the_city_Reclaiming_the_street

Kessinger, Bernd, *Neukölln - Die Geschichte eines Berliner Stadtbezirks*, 2015, Verganenheitsverlag, Berlin

Krishnamurthy, Sukanya & Stav, Tamy & Steenhuis, Chris & Reijnders, Daniek, *Child-Friendly Urban Design: Observations on public space from Eindhoven (NL) and Jerusalem (IL)*, 2018

Krysiak, Natalia, *Designing child-friendly high density neighbourhoods*, 2017, Cities for play

Ladd, Brian, *Ghosts of Berlin*, 1997, The university Press Chicago, Chicago

Langrish, John, *The Design Methods Movement: From Optimism to Darwinism*, 2016, Paper for the 2016 Design Research Society, 50th Anniversary Conference, Brighton

Löw, Martina, *The Sociology of Space*, 2016, Palgrave Macmillan, New York

MacDonald, Cathy, *Understanding Participatory Action Research: A qualitative Research Methodology Option*, Canadian Journal of Action Research, Volume 13, Issue 2, 2012, pages 34-50

Montag Stiftung Jugend und Gesellschaft, *Schulen planen und bauen: Grundlagen und Prozesse*, 2019, jovis Verlag, Berlin

Senatsverwaltung für Bildung, Jugend und Familie, *Partizipation im Schulbau*, 2019, Berlin

Senatsverwaltung für Stadtentwicklung, Familienwohnen in der Stadt, *Beispiele für kinder- und familienfreundliches Bauen und Wohnen in der Berliner Innenstadt*, 2009, Berlin

Senatsverwaltung für Bildung, Jugend und Familie, *Blickpunkt Schule 2020*, 2020, Berlin

Senatsverwaltung für Bildung, Jugend und Familie, *Berlin baut Bildung*, 2017, Berlin

Reicher, Christa & Edelhoff, Silke & Kataikko Paivi & Uttke Angela, *Kinder_Sichten, Städtebau und Architektur für und mit Kindern und Jugendliche*, 2006, Bildungsverlag EINS, Troisdorf

Render, Jane & Hill, Jonathan & Murray, Fraser & Dorrian, Mark, *Critical Architecture*, 2007, Routledge, New York

Robinson, Ken, *Creative Schools*, 2015, Penguin Books, New York

Sanoff, Henry, *Participatory Environmental Design*, 2018, CreateSpace Independent Publishing Platform

Stattbau, *Integriertes Friedhofsentwicklungskonzept (IFEK) - Friedhöfe Hermannstraße Berlin-Neukölln*, 2015, Evangelisches Friedhofsverband Berlin Stadt-Mitte, Berlin

The Welch Assembly, **Play in Wales**, 2004, retrieved from https://www.aber.ac.uk/en/media/departmental/sell/pdf/wellbeinghealth/Policy-Implementation-Plan-2006.pdf (03.04.2020)

United Nations, *Convention on the Rights of the Child*, 1989

United Nations, Department of Economic and Social Affairs, Population Division, *World Urbanization Prospects: The 2018 Revision*, retrieved from https://population.un.org/wup/ (31.03.2020)

Wadsworth, Yolanda, *What is Participatory Action Research*, Action Research International, Paper 2, 1998

Till, Jeremy, *The Architect and the other*, 2006 retrieved from https://www.opendemocracy.net/en/architecture_3680jsp/ (10.03.2020)

Online references

https://www.planet-wissen.de/gesellschaft/lernen/schulgeschichte/index.html#Reformen
visited on 10.03.2020

https://www.forbes.com/sites/stevedenning/2011/09/01/the-single-best-idea-for-reforming-k-12-education/#21f9bb036b40
visited on 10.03.2020

https://www.psychologytoday.com/us/blog/freedom-learn/200808/brief-history-education
visited on 10.03.2020

https://www.theatlantic.com/business/archive/2012/05/how-to-break-free-of-our-19th-century-factory-model-education-system/256881/
visited on 10.03.2020

https://bfm.berlin/news/
visited on 10.03.2020

https://architectureandeducation.org/2018/01/18/interview-with-jeremy-till-on-schools-contingency-flexibility-and-competitions/
visited on 10.03.2020

https://medium.com/thebeammagazine/architecture-needs-to-respond-to-the-needs-of-people-fa9ec6bbf19
visited on 31.03.2020

https://www.domusweb.it/en/architecture/2018/02/21/madrid-testing-participation-with-enorme.html
visited on 31.03.2020

https://www.archdaily.com/516401/pop-up-studio-explores-participation-design-at-london-festival-of-architecture
visited on 31.03.2020

https://www.tagesspiegel.de/berlin/kiezreport-neukoelln-bezirk-der-extreme/1764120.html
visited on 31.03.2020

https://de.wikipedia.org/wiki/Bezirk_Neuk%C3%B6lln
visited on 31.03.2020

https://www.studienkreis.de/infothek/bundeslandinfos/schulsysteme/berlin/
visited on 31.03.2020

https://www.morgenpost.de/berlin/article216730429/In-Neukoelln-gibt-es-bald-Gruenkohl-vom-Friedhof.html

https://www.tagesspiegel.de/berlin/stadtentwicklung-neues-le-
ben-fuer-die-berliner-friedhoefe/23155974.html
visited on 10.03.2020

https://pps-berlin.de/
visited on 10.03.2020

https://www.berlin.de/sen/bildung/schule/berliner-schulen/schulverzei-
chnis/Schulportrait.aspx?IDSchulzweig=20985
visited on 10.03.2020

http://jenaplan.de/
visited on 10.03.2020

https://www.spatialagency.net/database/participation.1970s
visited on 10.03.2020

https://www.childinthecity.org
visited on 10.03.2020

https://www.citylab.com/design/2018/12/teaching-children-architectu-
re-planning-vicky-chan-hong-kong/577720/
visited on 10.03.2020

https://bernardvanleer.org/urban95-challenge/
visited on 10.03.2020

https://www.theatlantic.com/education/archive/2016/05/why-young-
kids-learn-through-movement/483408/
visited on 10.03.2020

https://www.spatialagency.net/database/giancarlo.de.carlo
visited on 10.03.2020

https://architectureandeducation.org/2018/06/28/giancarlo-de-car-
lo-how-to-keep-educational-architecture-human-or-creative-anti-insti-
tutionalism/
visited on 10.03.2020

https://www.encourageplay.com/blog/16-different-types-of-play
visited on 10.03.2020

https://www.bak.de/berufspolitik/hoai-1/
visited 31.03.2020

Media coverage about the Berlin Schulbauoffensive

https://www.baunetz.de/meldungen/Meldungen-Schulneubau_und_
Sporthalle_von_NKBAK_in_Berlin_6960950.html

visited on 10.03.2020

https://www.konstruktiver-holzbau.de/2019/10/31/schnelle-holzmodul-
bauweise-sorgt-fuer-berliner-schulneubauten/
visited on 10.03.2020

https://www.tagesspiegel.de/berlin/schule/der-osten-als-vorreiter-er-
ster-neubau-der-berliner-schulbauoffensive-eroeffnet/24872012.html
visited on 10.03.2020

https://www.morgenpost.de/berlin/article225921789/Mitgestal-
tung-beim-Schulneubau-wirklich-erwuenscht.html
visited on 10.03.2020

https://www.morgenpost.de/berlin/article217146829/Hier-werden-in-
Berlin-neue-Schulen-gebaut.html
visited on 10.03.2020

https://www.hhpberlin.de/de/collections/news/2019/hhpber-
lin-macht-schule.html#image-1
visited on 10.03.2020

https://www.sekundarschulen-berlin.de/neubau/oderstrasse
visited on 10.03.2020

https://www.baunetz.de/meldungen/Meldungen-Wettbewerb_fuer_mo-
dulare_Grundschulen_in_Berlin_entschieden_5605782.html
visited on 31.03.2020

https://www.morgenpost.de/berlin/article228392451/Die-Schulbauof-
fensive-kommt-in-Berlin-nur-schleichend-voran.html
visited on 31.03.2020

https://www.berlin.de/sen/finanzen/haushalt/schulbauoffensive/ar-
tikel.613867.php
visited on 31.03.2020

https://www.tagesspiegel.de/berlin/schulbauoffensive-in-ber-
lin-so-sehen-die-neuen-berliner-schulen-aus/23929420.html
visited on 31.03.2020

https://www.rbb24.de/politik/beitrag/2019/09/schimmel-schulen-ber-
lin-modularer-ergaenzungsbau.html
visited on 31.03.2020

https://www.morgenpost.de/berlin/article227938809/Aer-
ger-um-Schul-Container-Ergaenzungsbau-fuenf-Meter-zu-lang.html
visited on 31.03.2020

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