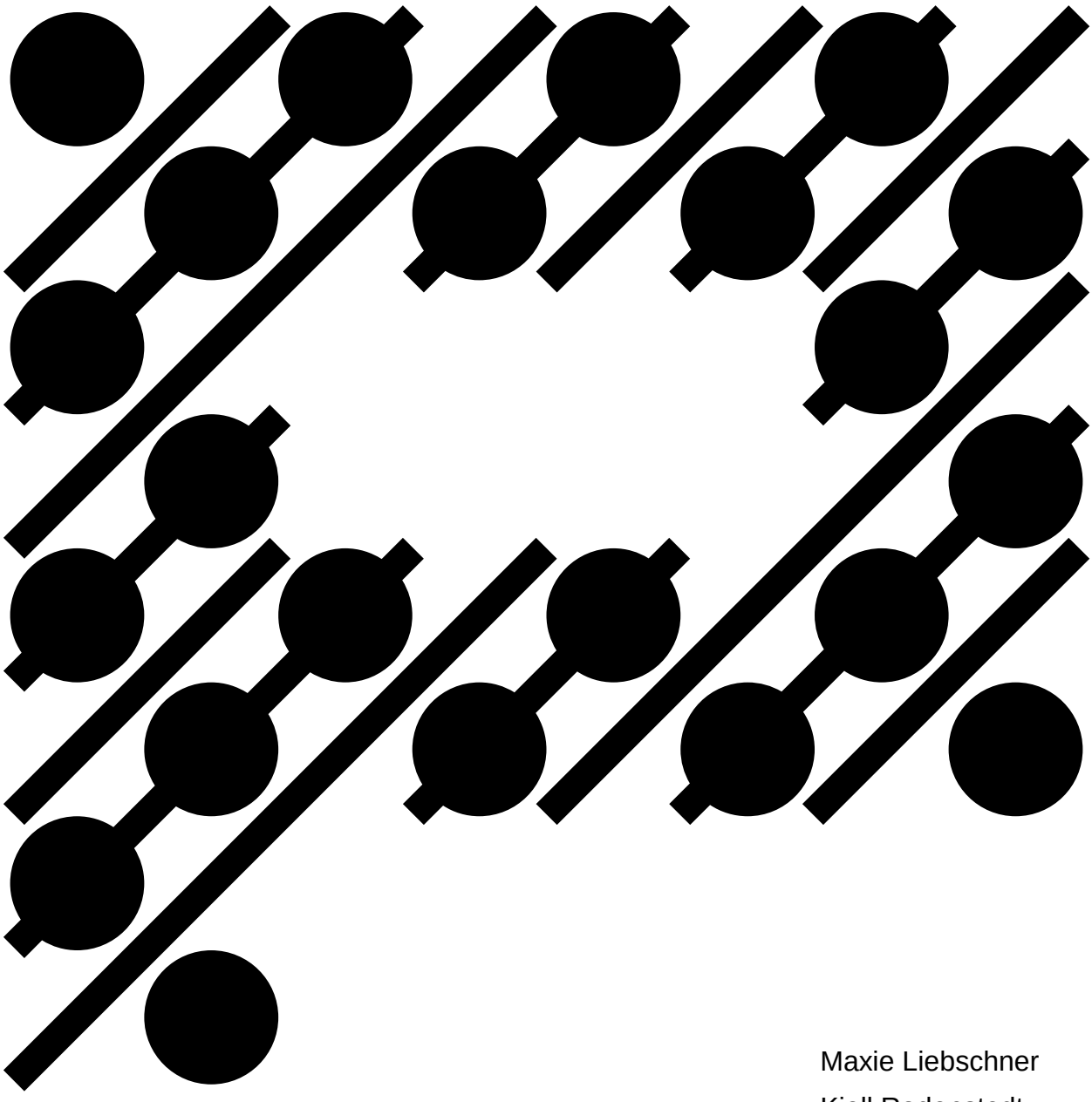
The Calm Space in the Playground

Meet Fungi the Mushroom

R.19-01



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Preface

The report that you are about to read is the result of a creative and in some ways chaotic project, where students from different disciplines and universities worked with challenges that Stockholm, as a county and a city, is facing.

The city is our lab! - is the motto for Openlab. Students worked with challenges provided by Stockholm City and Stockholm Council in a wide range of areas. Within the framework of a 15 credits master-course, students worked in project-groups of 6-8 persons for one semester. To develop an understanding of the issue at hand, students engaged with the set challenges though the use of various research methods such interviews and observations, as well as literature studies. Students then developed a number of proposals for solutions, one of which has then been pursued to create a more concrete solution that is tested within real-world situations.

Whilst working together at Openlab, students from different disciplines met and interacted with each other – not always without complications. However, in these meetings something new and exciting can emerge. Students carry with them experiences of interdisciplinary discussions and solutions - a very important competence for meeting challenges of the future.

The result of all discussions, analysis, and synthesis's is here documented in the report. Of course the report can only cover some parts of this dynamic and creative process. We who have worked as teachers in this course have our main function as coaches, providing tools during different phases of the project. The students work according to a process model based on *Design Thinking* and *SCRUM*. Creative ideas and systematic thinking merge together to a final project.

For us this is learning at its best – Freedom, Creativity, Social interaction, Engagement and FUN! But it is also based on real challenges in society – the idea is that Openlab's project should contribute to a better Stockholm for its inhabitants. **The city is our lab!**

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The Openlab Master’s Course Report Series

13:01

Hitta rätt i vården

Ett värdigt åldrande

13:02

Vårdombud och Vårdagram

Rätt bil i rätt ruta

Hem & Vision

14:01

Levande stadsrum

LivsLabbet

Alla kan falla

14:02

Spira

Södersken

Zon 164

15:01 (English)

Increasing Patient Involvement in the Healthcare System

Stockholm in Motion

Green Power of the Ecoflower

15:02 (English)

Grassroots Movements & Stockholms Stad: Bridging the Gap

BikeMeSTHLM

The Step-Up! Planning Tool

16:01 (English)

Inside out

Elderly people & warmth

EduAction

16:02 (English)

Jobbtorg

Helping Hearts

Inspiring the Youth of Husby

17:01 (English)

The process wheel

Childish solutions

MindTrip-Making nursing homes more like homes

17:02 (English)

Cykelbanan+

Finns I Sjön

Culturama

Stockholm Water Tap

18:01 (English)

The Dinner Dome

The Magic Button

18:02 (English)

Revival

SpiderWoman 2:0

Fireplace

Smart Square

DiContrast

Abstract in English

In an expanding city with growing population the question how to use limited space is vital. It is particularly important for preschool yards, where outdoor environment directly affects children's' development. By including children's perspective in the design thinking process, we discovered that yards of today are too noisy, have no place to hide and lack inclusiveness, some childrens become overwhelmed and struggle with having focus. This also affect the working environment for teachers. We believe that preschool yards, no matter how small, should have diversity of spaces for different needs. That is why we created Fungi the Mushroom and the concept of micro-spaces as a helping tool for teachers, who could combine it with a pedagogical approach in order to make environment in their yards calmer and more inclusive.

Sammanfattning på svenska

Stockholm växer med en ökande befolkning och förtätning i bebyggda områden och nya områden tas i bruk för bostäder. Den totala tillgängliga ytan är och kommer att förbli begränsad. Med ökat bostadsbyggande följer även behov av nya förskoleplatser, som tävlar med andra behov av yta. Barn i förskolan behöver inte bara utrymme inomhus utan även utomhus. Miljön utomhus påverkar barnen, oavsett hur stor yta som finns till förfogande måste den vara av hög kvalitet

Idag byggs förskolegårdar utan att barnens perspektiv och deltagande finns med. Många av gårdarna är utsatta för starka ljud, inte minst från barnen som vistas på gården. Det finns ingen plats att gömma sig och få lite lugn och tysthet. Detta drabbar framför allt barn med speciella behov och som har svårt med stöket runt omkring, men även andra barn som då och då har behov av en lugnare tillvaro. Dagens förskolegårdar skapar ett utanförskap för många barn. Även lärarnas arbetsmiljö påverkas av högt ljud och bullriga miljöer.

Fungi, som vi skapat i form av en svamp - Svampen Fungi - är en mikromiljö som ska hjälpa barn för att få en lugnare yta. Fungi ger även förskolepersonal en pedagogisk möjlighet att skapa alternativa ytor för olika behov samt att förskolegårdarna blir mer inkluderande för alla barn.

Content

The PG-team

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Master's student in Urban and Regional planning at SU with background in active mobility and international relations.

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Master's student in Environmental science at SU with Bachelor's in Geo-Environmental science and Sport Journalism

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Currently doing a master in Art History and has a MBA in International Management and a BA in Business Administration and IT.

In the first cycle the team also included:

Castrol Mutinda / Kenya

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Mariano Villalta / Costa Rica

Masters student in Sustainable Technology at KTH University with background in technology

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Master's student in Innovation Management and Product Development at KTH, with bachelor in Design and Product Realisation

1. Introduction

1.1 Background

The city of Stockholm is under immense growth. The population in Stockholm will grow to one million in 2020 and to 1.3 million in 2040, according to forecast made by the City of Stockholm. The population growth is largely due to a people moving to Stockholm and a high birth rate. New buildings, roads, and squares are being built around the entire city.

According to Stockholm City Plan one of the goals for 2030 is to create sustainable local communities in the city. To be sustainable the city must be inclusive and provide a fair and equal opportunity for all citizens. These values are also supported by Region Stockholm. In the regional development plan, it is stated that by 2050 the region must be open, equal, and inclusive.

Public services for everyone and efficient use of available space are top priorities for the city of Stockholm. Many stakeholders compete about the available space. To build new areas or to increase the population density in old parts, there must be space for children.

Children need both indoor and outdoor space for complete development, but since the city lacks adequate space for construction, it is necessary to make sure that preschools being built are of the highest quality possible. New preschools are planned and built. But with limited space there are, and will be, preschools with very small outside playground or, even without a playground.

1.2 The Challenge

Our original challenge was provided from the city district of Enskede-Årsta-Vantör, where around 80 new preschools are planned to be built by 2030. Same to the city of Stockholm as a whole, city district Enskede-Årsta-Vantör is expecting a significant growth in population and increase of birth rate in the upcoming years. The city district approached Open Lab with the following challenge: **”How do we program outdoor preschool environments with high quality in an expanding city?”.**

Team of the city district Enskede-Årsta-Vantör already had a vision on how to create an evaluation system for yards in order to increase their quality and was working on elaboration of this system. So when choosing the focus area for our project we narrowed down the original challenge and tried to find a new niche, in which our findings could both add to the work of city district and foster dialogue around big topics, such as children’s perspective, inclusiveness etc.

1.3 Process

Design thinking process was the leading tool for this project. This process has a form of so called “double diamond” structure that consists of two iterations (cycles) with four equal phases each: emphasize, define, ideate and test.

This report will reflect the process we have followed and show both work during two iterations and the final concept. The first cycle stands out with a comprehensive emphasize phase, which means a lot of interviewing and data collection. It resulted in a number of insights, which we used for the ideation phase in order to formulate four different concepts. In the second cycle just one concept had to be chosen to move forward with. With the help of new data and new analysis it was elaborated in detail and became our final proposal as a solution.

2. First cycle: January to March

2.1 Empathize phase

This phase included a stakeholder analysis and data collection from the different stakeholders and other material.

Stakeholder analysis

We identified the most obvious stakeholders like children, teachers and the city district. During the process of data collection and interviews we finalized the stakeholder map. The process started out by us focusing on the teacher's perspective and viewing them as advocates for the children. We later met with Barnombudsmannen (advocates for children in Sweden) and shifted our focus towards prioritizing the children's perspective and having the Convention on the Rights of the Child (UNCRC) as our point of departure. Our final stakeholders map (Figure 1) includes quite a broad range of organizations and people involved in the building, management, operating and maintenance of preschools, as we think that some national/international documents and organizations (such as UNCRC) can have a significant impact on the local level.

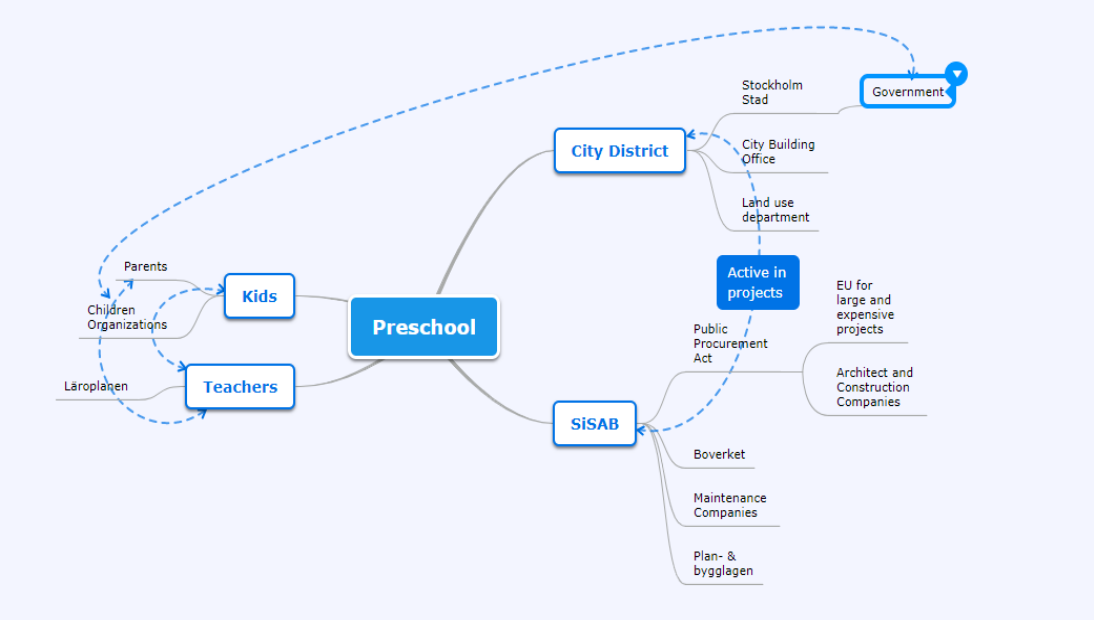


Figure 1. Stakeholder map

Data collection

Our data collection was done in two ways. First, we made a research about organizations, laws and regulations that have to do with pre-schools in Sweden as well as got inspiration from several more futuristic and progressive ideas that may influence preschools. The second part was to interview stakeholders. This part is covered under the topic Interviews below.

Preschools are governed by several laws and regulations. We went through reports from six different organizations and considered three examples of great playgrounds, for example:

- Japanese kindergarten that inspires movement
- (Ted Talk y Takaharu Tezuka, 2015: 'The best kindergarten you've ever seen")
- *Imagination playground* in New York (a block-based system designed to transform children's lives through play)
- Article by Tom Dobbins: "Shaping the future. What to consider when designing for children" (ArchDaily.com, September 2018)

The organizations and laws included:

- PBL;
- Boverket;
- Gör plats för barn och unga;
- Skolverket;
- Lekvärdesfaktor Malmö;
- UNCRC

We also got inspiration from visits to Tekniska museet, who has worked with topics like accessibility and *Megamind exhibit*, where technology, interactivity and activation of all sensors were the focus.

We also attended a conference "Får barn plats i framtidens städer?" held by ArkDes about children in cities with emphasis on the implementation of the Children's convention that will be law in Sweden from 2020, All the above are reference information and knowledge that has governed our thinking and has had an impact on some of our findings and ideas.

The interviews were with main stakeholders: teachers, barnombudsmannen, SISAB and the city district of Enskede-Årsta-Vantör and, of course, children. The findings from the interviews are summarized below.

Teachers

We had opportunity to interview teachers on two different occasions. One of them was a workshop for head-teachers organized by the city district Enskede-Årsta-Vantör, where we

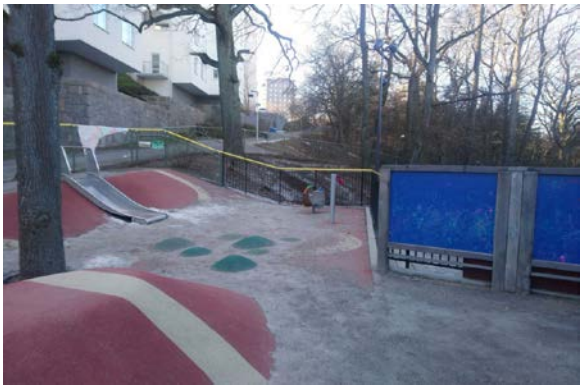
were invited to observe. The other was an interview with a teacher from a preschool in Liljeholmen.

- Teachers inspire play, however teacher led activities outdoors are not mandatory and thus not always take place;
- Yards are designed for summer and not for winter. Many activities common for summer become impossible in the winter, for example sandboxes get frozen etc.
- Perfect yard has to have a variety of spaces: place to run, to sit quiet, to be creative, to rest
- Outdoor environment is in general too noisy, so there is a need of more quiet spaces and less noisy materials
- Teachers claim there is a poor choice of materials for the yard. For example, the rubber surface burns when it is too hot in the summer
- Teachers want a good overview of the yard, so they can see if children get hurt
- Teachers believes that children get bored with the yard after 5 years
- Teachers feel pressure from parents regarding safety
- Teachers want the yard to enable the teaching plan

Children

Interviewing children was not our intention originally, however after talking to Swedish barnombudsman we realized that it is vital to talk to children, especially as they are the final users of the preschool yard. Thanks to the preschool in Liljeholmen we got the opportunity to interview two groups of children, five children in each. There were both boys and girls and they were 5 years old. First, we asked them about different aspects of their preschool yard and then asked them to draw a perfect yard. The findings are summarized below:

- Children like big yards and the ability to move and run
- Most children prefer summer, because it's better for playing outside
- Children get cold when they are bored
- Yard always looks the same for them
- It is hard to go away, to hide when it becomes too noisy
- Some of them like to watch others playing football (not play themselves)
- All children love the fruit park (a park located close to kindergarten where playsets have form of different fruit)
- They don't like the plastic grass because it's sharp
- Among the ideas of a perfect yard were: Grona-Lund-like yard, Milkshake station in the yard.



Picture: yard in Liljeholmen preschool

Barnombudsmannen

We met with two representatives from Barnombudsmannen who are responsible for representing children interests and ensure implementation of the Children convention on the national level in Sweden. They encourage us to put children' perspective first especially when designing for children. They gave us valuable tips for interviewing children and told about Danish example of working with children's perspective. They also shared that some of the departments in City of Stockholm (Department of Transport for instance) have already included children's perspective in planning.

- "You *should* always include children when you build for children!"
- Children are usually not considered in the design process
- Gender neutral environment/equality should not be taken for granted
- Yards should encourage diverse activities (Ex. some children creativity can be reduced by a stage in the yard, because they are shy).

SISAB

SISAB is a semi-governmental agency responsible for building and maintaining all schools and pre-schools in Stockholm. There is a complicated structure of how decisions about the new pre-school are made and how SISAB is involved in the decision process. They are mostly responsible for making sure that safety and technical standards regulations and budget limits are met. City district is the one that initiates the process and works close with SISAB on the preschool creation. SISAB has several hundreds of subcontract architecture and maintenance companies that participate in the process through an announced open competition (LOU). SISAB needs to prioritize the maintenance due to budget considerations.

City district Enskede-Årsta-Vantör

We used City district Enskede-Årsta-Vantör as a representative of the local government, which was important actor on our stakeholder map. As the City district was our challenge giver, we did not conduct a separate interview with them but gathered key facts that appeared during our regular meetings.

- Play Value should be equally important in the planning process with the three existing criteria: money, space and legislation (safety)
- Children don't have a say when building preschools. City district would like to listen to them more but is not sure how.
- City district is the project owner when it comes to a pre-school. It initiates the process and has the final say.

2.2 Define phase

Insights

During the define phase we narrowed down again to be able to reframe the point of view. By doing so we started out with creating personas, which are **fictional characters created based on teachers and children we met**. We choose to focus on teachers and children since they are the end users for the preschool yard and then we created solutions based on their needs.

The following is a summary of the insights we have, based on the research, interviews and the personas above:

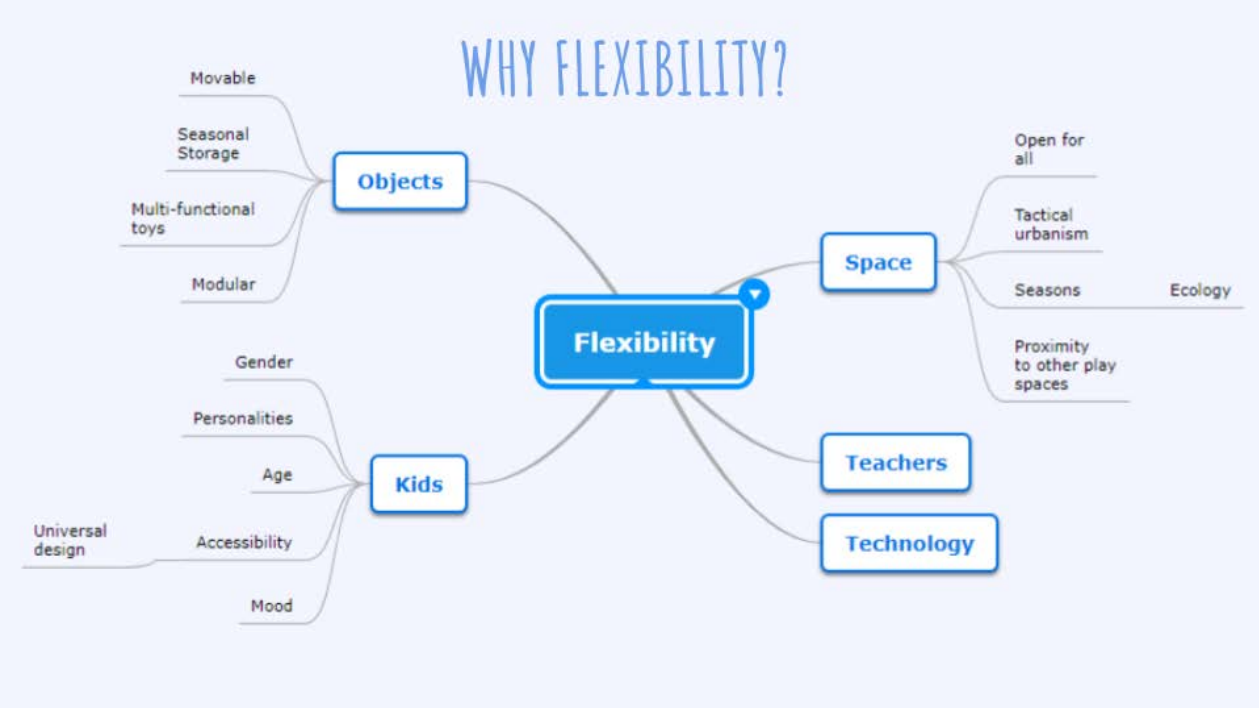
Preschool yards must be more flexible and possible to use in all seasons (summer and winter). Yards should have different spaces for different things, activities – both in groups and individual. When building new yards, the material used must be nice to walk, run and play on, preferably natural organic material. During both planning and construction, the children's' perspective must be included. There also seems to be a discrepancy in who owns the project and what the different roles and their responsibilities are

Re-define challenge: Flexible yards

Based on the collected information, insights from the interviews and international examples we concluded that flexibility of the yard is what we might need to address in order to tackle the challenge. We re-defined challenge in the following way:

"How can we create more flexible yards in a limited space?"

Our challenge became centered around the concept of flexibility. Below is the mind-map we created during the working process:



Flexibility may:

- Change the perception of space
- Affect and improve the usage of space
- Create possibility to use the space for different needs.

More flexible environments also promote creativity and equality.

2.3 Concepts

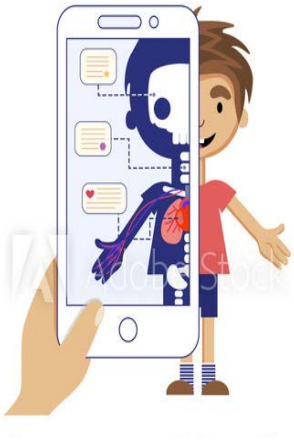
During this first iteration we defined four possible concepts. These are summarized below and complemented with weaknesses based on feedback we received from our challenge-givers and teachers.

B(AR)N for playful learning:

"Augmented Reality can improve outdoor environments for children with cognitive disabilities"

This concept is an application that would combine the augmented reality technology with the teaching plan. Children could use the technology outdoors to learn about for example ecology as they play since the technology can recognize objects, like a tree, and then provide information directly in the device. It could also be connected to Stockholm city and

historical things. The application could create active play by for example using the format of a treasure hunt. B(ar)n would offer a variety of activities and games.



Benefits of B(ar)n: preschools already have tablets; the technology is versatile and offers several opportunities. Technology can adapt to the special place. Technological solutions can contribute to accessibility and flexibility of space.

Fulfills the need to include the teaching plan and to make the yard more interesting, as child learns different things over all the years the child is in preschool.

The project could be developed through Crowdsourcing or open innovation.

stock.adobe.com/se/images/concept-augmented-reality-educational- app/248405732

Weakness of the concept: Not all teachers have knowledge of technology and therefore the solution might not be used in a desired way or extent.

Switch-witch (rotation of playsets)

"Children get bored of playing in the same yard for five years"

Parts of the playground can be flexible and available for rotation and exchange. This is mostly about new yards as on existing ones everything is already fixed. Some bigger sets can stay fixed because they are not easy to move. Can be just rotated with other preschool, where basically team come and take some sets and rotate with other preschool or can be taken in toy exchange center and then exchanged for some other set. Toy exchange center can be larger place where sets are stored and maintained and then forwarded to the playground. Changed objects can have different themes (one-month fruit, next pirate).

Magic > switch-which comes, and the yard is new => can be perceived as magical by children.

Fulfills the need to have a changeable preschool yard, that does not look the same over all the years.

Weakness of the concept: Hard to implement – who would be project owner? There could also be logistic difficulties.

LÅDOTEKET (Activity box library)

Lådoteket is a concept that is going to be like a library where preschools can come and rent what we call activity boxes that is especially developed for outdoor use. Each box will have a theme that is going to be based on the curriculum, it could for example be an ecology or technology theme.

The box will also have a QR-code that you can scan for instructions on how to use the items in the box. It could for example be experiments or games.

We imagine Lådoteket to be a local initiative and therefore teachers, the city district and local actors (like different cultural institutions) could work together and come up with new ideas on how to improve and stimulate the outdoor environments for preschools in the area. The solution is therefore centered around creating a feeling of belonging to a community but also a platform for knowledge exchange and creating understanding amongst stakeholders.

This solution would especially be good for existing yards since from a sustainability and resource perspective it would be easier to work with smaller changes and stimulate imagination and play through the perception of space then to actually rebuild existing yards.

Weakness of the concept: Already been tested and hard to find time and motivation for teachers to engage in such a project.

Mobile quiet room

“Hard to find a space for rest in the yard” - “Ella” 5 years old

The mobile quiet room looks like a tent/changing room/Wigwam. It is made of soundproof materials, easily moved, stored indoors during the night. It is all-seasonal as heating opportunity is installed inside as well. A kid can choose light color and comfortable light intensity on his/her own. Materials should prevent "drumming" and disturbance from other children.

This room ensures cognitive rest for children who are disturbed by noise, light and other children playing. They can turn on music inside or choose a story to listen to from a digital library.

This concept will increase flexibility in the yard with a new space that can be defined as and when there is a need.

Weakness of the concept: Not inclusive solution due to the fact that only one child could be in the quiet room at a time.

3. Second cycle: April – May

3.1 Choice of one concept

When this cycle started the first thing, we did was to select one of the concepts that was defined in the first cycle. After a very brief discussion we all agreed to go on with the concept of a quiet space in the preschool yard. We felt it was strongest concept that also related most to the insights and needs we formulated in the first cycle, which are that yards are too noisy and lack calmer spaces which in turn creates an environment where children can feel overwhelmed and stressed at times, and where teachers experience an undesirable working environment. Environments like these can lead to stress related symptoms, tiredness and problems with hearing. [1] The increasing problem of noise level also relates to the lack of space in the city of Stockholm since more children are playing in a smaller area at the same time.

3.2 New empathizing

Visit to Tekniska museet

We met with the curator of the MegaMind exhibit to empathize further around how you can work with children, technology and accessibility. We were especially interested in the station “Rest yourself smart” which is a room where you can go for cognitive rest that helps you regain focus.[2] This station at the exhibition was a big inspiration for the concept *Mobile quiet room*.

“Vila dig smart” on youtube: https://www.youtube.com/watch?v=rEldPMcJ0Q4

Further research: Ways of working with sound environments in preschools

While researching around sound environments in preschools we found one main source that has been of big help in our further development of our concept which is “Ljudguiden” that is a guide created by Svenskt Näringsliv, PTK and LO. The project concerns how you can work with loud environments to improve working conditions for teachers and learning environments for children.[3]

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[1] Prevent; Ljudguide för förskolan. Hur påverkas vi av ljud? Ljudet och hälsan. https://www.prevent.se/ljudguideforskolan/hur-paverkas-vi-av-ljud/ljudet-och-halsan/ 2019-05-28.

[2] Tekniska museet; Stationer i MegaMind; 2018-02-05.

https://www.tekniskamuseet.se/upplev/utstallningar/megamind/stationer-i-megamind/ 2019-05-28.

[3] [3] Prevent; Ljudguide för förskolan. Om Ljudguiden.

https://www.prevent.se/ljudguideforskolan/om-ljudguiden/ 2019-05-28.

The guide describes methodological and pedagogical ways of working as well as adjustment that can be made in the physical space. [4]The guide mainly concerns the inside space, but the strategies stated below can also be used for outside environments:

- Create awareness around the sound level by involving both teachers, children and parents in the process.[5]
- Using soundproof and absorbent materials [6]
- Dividing the space into smaller sections to avoid creating vast spaces (since sound then has an easier time to "travel" or bounce and therefore also increase) [7]

Further research: what constitutes an inclusive and accessible environment?

The preschool, and its yard, should be designed to enable learning and development for all children and the environment therefore needs to be inclusive in design, which means you should create environment that everyone can use on equal grounds. The preschool should hence adapt its environments according to the current needs of the children attending the preschool not the other way around. [8]

Although we have seen that this is not always the case; for example, we saw during a preschool visit that some children needed to wear hearing protection whilst playing outside, which is a type of solution that is excluding instead of including. A functional limitation is something that happens when an individual encounter an obstacle in the environment around them and is therefore always an issue that needs to be taken care of in the the physical or environmental space since the problem occurs in the surroundings and not in the individual. [9]

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[4] Prevent; Ljudguide för förskolan. Hur går man tillväga?
https://www.prevent.se/ljudguideforskolan/ansvarkom-igang/hur-gar-man-tillvaga/ 2019-05-28.

[5] Prevent; Ljudguide för förskolan. Hur går man tillväga?
https://www.prevent.se/ljudguideforskolan/ansvarkom-igang/hur-gar-man-tillvaga/ 2019-05-28.

[6] Prevent; Ljudguide för förskolan. Fysisk miljö.
https://www.prevent.se/ljudguideforskolan/goda-exempel/inredning/2019-05-28.

[7] Prevent; Ljudguide för förskolan. Fysisk miljö.
https://www.prevent.se/ljudguideforskolan/goda-exempel/inredning/2019-05-28.

[8] Myndigheten för delaktighet; Begrep; 2017-07-05.
http://www.mfd.se/stod-och-verktyg/begrepp/ 2019-05-28.

[9] Myndigheten för delaktighet; Begrep; 2017-07-05.
http://www.mfd.se/stod-och-verktyg/begrepp/ 2019-05-28.

Visit to Tom Tits

The original idea was to create a quiet/calm space for children. A space where children have the possibility to calm down and relax by being away from all the noise and active play. Going to Tom-Tits changed our perspective about the need of a calm space.

The Tom-Tits preschool does not have one big playground, but they have a lot of flexibility. Their idea of flexibility is to give the teachers and children the possibility of creating their own yard with the material they have/find. The playground does not include any toys, besides a sandbox. Children and teachers need to be creative for their own activities. In that way the yard changes daily and doesn't have just one, prewritten purpose. Purpose and yard change with the needs of the children and the teachers. Children and teachers don't just actively decide about their activities, they also create their space. With giving them the possibility of flexibility and minimizing toys the issue around size of space shrinks. It becomes more about making the most out of the space.

An advantage of the need to create space is the interaction children and teachers have. While they create a space and interact, they build a space for interaction. One of the main focuses of Tom-Tits is the focus on engaging the children to interact.

Picture: visit to Tom Tits preschool (pictures in the yard were not possible because children were present)

Another important point are the different levels of the yard. The Tom-Tits Preschool have one main part, and an adventure part with trees where children can climb and run. It is important to give the different possibilities of activities. With the divided yard we also got another insight about the need of a quiet/calming space. A Yard like the Tom-Tits Yard doesn't need a quiet/calming space because it is divided in a way that no real noise can arise.

Coming from this perspective we thought more about flexible yards with divided, different spaces. Instead of having one big yard we thought including different Micro-Spaces. Finally, we focused on a Micro-Space for children that tend to get overwhelmed. A Micro-Space which in any yard may help the children to relax and find a focus.

At Tom-Tits there is a lot of room to create and change the yard. Instead of toys they focus more on material with which they - the children and teachers - can build and create the yard. This preschool is also a good example for division of space, through redefining the space day by day.

Today, flexibility is achieved through the option of choosing between different preschools, as there are different solutions of the outdoor environment and the preschool yard in different preschools.

3.3 New insights

- The physical space is a buffer for pedagogical ways of working with sound environment in preschool yards
- creating a yard for children means also creating a space for social activity
- Less square meters per child = more noisy environments
- The environment should adapt to the needs of the children and not the other way around
- Yards do not have to be fixed, they can be changed according to the needs
- Teachers can tell the children what different parts can or may be used for e.g. calm space
- Planning the outdoor visit may be planned together with the children.

3.4 Creating inclusive micro-space: Fungi the Mushroom

After the second emphasize phase two main questions we had for the concept of quiet room were: How might we make it more inclusive and how can we make it a space that contributes to pedagogical ways of working with noisy environment? We came to the conclusion that we should develop our solution based on a form of a micro-space instead of a room.

A micro-space is a smaller space in the yard, which has its special features, atmosphere and contributes to certain feelings. In particular, micro-space that would address the key needs mentioned earlier should provide the following senses: gathering, calmness, belonging, concentration, feeling of protection and possibility to hide.

It is important to say a few more words about feeling of belonging and being part of community. The previous idea of the quiet room assumed that children, who need calmer environment, will be separated from the other. However, we believe that it is important to make sure that there is nothing wrong with being overwhelmed or tired of noise. Being in a community (among other children) might be stressful but we still want to be part of it. That what a micro-space is for.

In order to make a sign, a physical attribute for this micro-space we created a microorganism: **Fungi the Mushroom.**

Functions of Fungi the Mushroom

Fungi the Mushroom as a Micro-Space is a part of the yard. It is an implementation for defining a specific section as a calmer space of the yard. Children will use Fungi the Mushroom when they are overwhelmed, and it gets too noisy. It is a place for calming and for finding a focus. Therefore, they can listen to relaxing music and to stories. Fungi the Mushroom is supposed to give a feeling of comfortness and security. It should be a place to hide to be independent from teachers but still close to the community. That's why it is important that Fungi the Mushroom isn't a closed room. The children can still see the other children and teachers to feel connected. So that they still feel as part of the community. Speaking of softness Fungi, the mushroom has also a practical advantage as sun and rain protection. This is more and more important referring to the climate change. Fungi the Mushroom should give children the possibility to use the yard by every weather. For the possibility to use it as well in wintertime when it is dark, Fungi should be installed with a soft light. The soft light supports the feeling of warmth and coziness. An important point is the texture of Fungi the Mushroom. The texture should be soft and nice to touch. In that way the children get comfortable by leaning against or touching. it. We imagine a texture like stress ball, so that the contact to Fungi Mushroom decreases stress or nervousness. This helps the children to focus by being by themselves and to zoom out of their environment. The material of Fungi the Mushroom should also be sound absorbent to keep the noises out of the micro-space. With Fungi the Mushroom children learn how to act around noisy environment.

3.5 Why choose Fungi the Mushroom?

With Fungi the Mushroom we create a little Micro-Space in a big yard, which helps the Children to learn to relate to and act in a noisy environment. This kind of self-awareness children can use also outside after preschool. Maybe it even prepares them with an ability of handling stress and creating an awareness around sound in relation to themselves and others.

Fungi the Mushroom can also help contribute to better working environments, for teachers, which may affect the care that are given to the children. Fungi the Mushroom may create a mental space of relief for children which they can take with them on their life journey. The metaphor of the Fungi will be with them when they need relax and calm down in society since noisy environments is an issue in general in our daily lives. These long-term effects are very difficult to evaluate, as they are personal, but will probably decrease future costs of bad health and stress.

This solution gives the yard more flexibility and will increase the inclusiveness, especially for children that have an increased need for calm and not have to be distracted by the other children.

The other needs we have defined such as including children in the planning and construction of new yards or to define clear ownership, roles and communication channels. These things are important but will need to be analyzed and established in another project.

With Fungi the Mushroom we build a balanced triangle of Teachers — Design — Children, which is a strong tool for working on calmer and more inclusive environments in the yards.

Business Case

To make a solid business case we need information on who can do the final design and manufacture of Fungi the mushroom and what their price should be per unit. The price will, of course, depend on the market and the pricing philosophy, for example cost plus, value-pricing or competitive pricing. If cost-plus there must be an estimate on the number of units that can be sold (economy of scale). This will result in a price that the preschool or the City will have to pay, after negotiations according to LOU (Lagen om offentlig upphandling).

Let's just assume that the actual price will be KSEK 50 – 75. The cost of installing Fungi in the yard can be estimated to be KSEK 25.

There are probably overhead costs to be covered to pay for using the city's resources, probably 50 % of approximately KSEK 75 – 100 above. The total cost per unit will then be in round figures KSEK 140 per unit.

With a lifecycle of 5 years (the normal depreciation period) the cost per year will be KSEK 28. Add to this maintenance and services, such as STIM charges if music is being played, the annual cost would be around KSEK 40.

At present, we are not able to do any estimates on the actual benefits in monetary value. We are, however, positive that the future cost savings will be enough to motivate Fungi the Mushroom in most preschools.

In the best of worlds there may only be a need for a very simple Fungi the Mushroom, without all advanced features. It may only be as a sign for the calm space, where children can go and be and not be disturbed from other children's' noisy plays.

We would like to thank all that have helped in our project.

Stockholm Stad (Enskede-Årsta-Vantör)

Fredrik Holmgren, Linnea Engström, …

Preschool visit

“Anna” and the children, (due to GDPR we have decided to not include the names of the children and teachers we interviewed)

SISAB

Marie Rosfors, Head of Project Development

Barnombudsmannen

Petra Dahlström

Jonas Fungisson

Tom Tits Experiment (preschool)

Kent Leini

Tekniska museet:

Mariana Back, Intendent, Curator

Open Lab

Liv Gingnell

Magdalena Holdar

Sofia Vikström

Martin Jonsson

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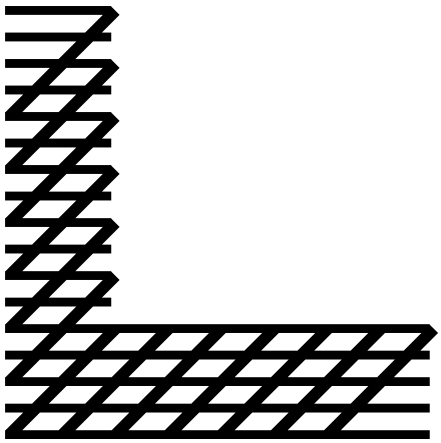
Calm Miscrospace in the Preschool Yard



In an expanding city with growing population the question how to use limited space is vital. It is particularly important for preschool yards, where outdoor environment directly affects children' development. We discovered that yards of today are quite noisy, no place to hide and lack of inclusiveness. Some children become overwhelmed and struggle with having focus. We believe that preschool yards, no matter how small, should have diversity of spaces for different needs. That is why we created Fungi the Mushroom and the concept of micro-spaces as a helping tool for teachers.

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