

Skogskullens Förskola

The Reggio Emilia Approach and the Built Environment



Märta Nordström
Chalmers School of Architecture
Department of Architecture & Civil Engineering
2025
Building Design & Transformation
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"Play is one of the childhood roots of adult happiness"

- Edward Hallowell, 2002

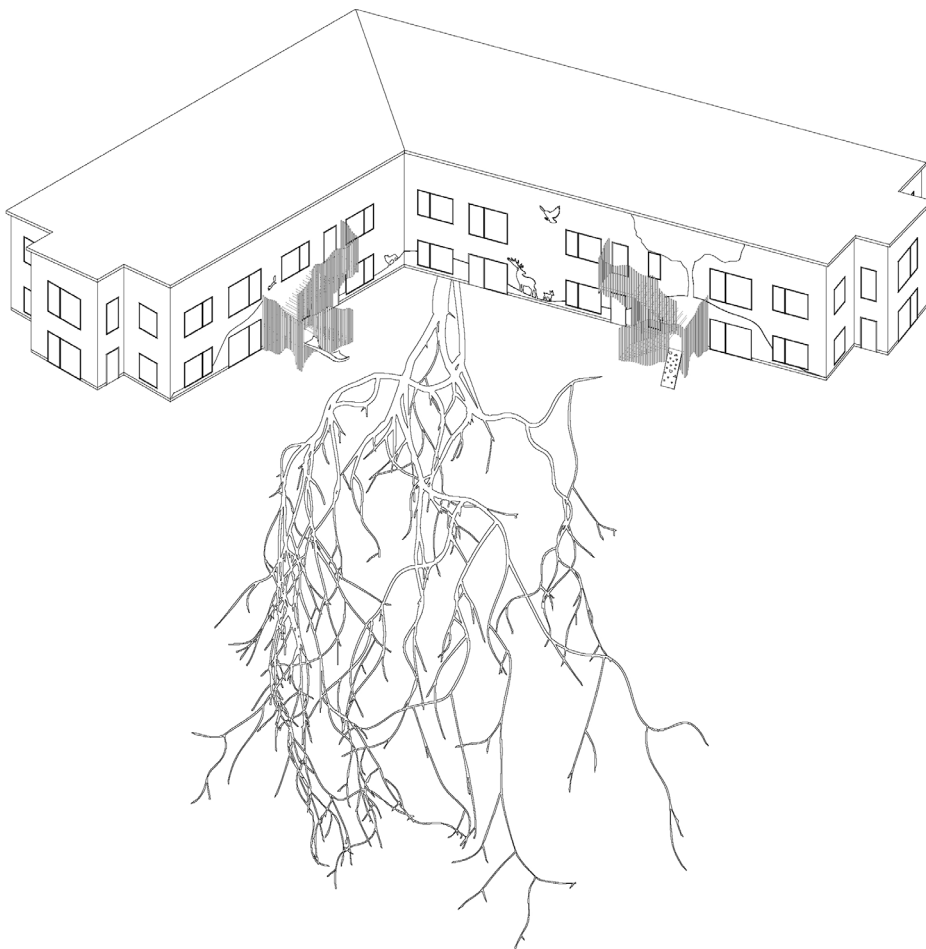




Figure 01. Exterior render of the yard and southern facade.

Abstract

Many children spend their preschool years in temporary barracks with uninspiring architecture and insufficient outdoor spaces. This thesis establishes that as a problem and aims to contribute a hopeful addition to the current preschool discourse by taking knowledge from Reggio Emilia pedagogics and its approach to the built environment. The proposal strives to create inspiring educational architecture with joyful and elegant elements.

The project proposal is a wooden preschool, located in Tynnered, southern Gothenburg. It fits eight departments, or approximately 150 children. The project leans on the Reggio Emilia ideas surrounding natural materials and trusting children with maintaining their space. Methods used to develop the project are research for design through literature studies, site visits, and the studying of reference objects. Research has also been conducted through the iterative design process, using models and drawings. The project has grown out of the Reggio Emilia pedagogical philosophy and landed in the cultural context of the site. Conclusions drawn from this project have been surrounding the connections between architecture and pedagogics, and how they can coexist and cooperate without being too restrictive. A problem the thesis has tried to overcome was the balance between an economically defensible project while still creating valuable architecture. AMunicipal guidelines have been considered alongside the Reggio Emilia philosophy, and in situations where they contradict each other, the Reggio Emilia philosophy has been allowed to challenge the municipal guidelines in order to develop the current preschool architectural discourse.

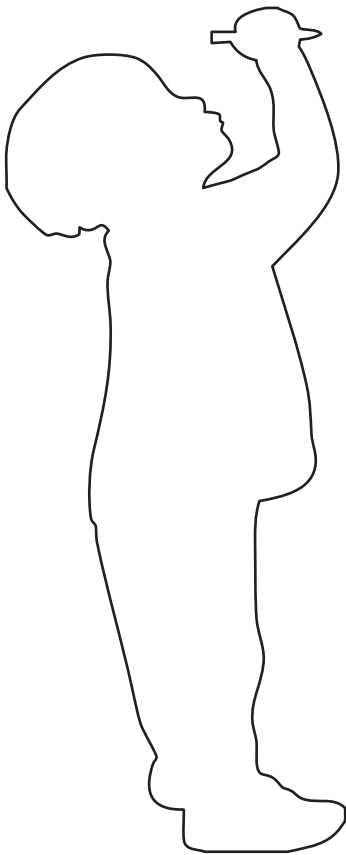
Keywords: Children, Reggio Emilia, Preschool architecture, Wood buildings.

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Chapter 1

Introduction



Purpose & Exploration
Research Question
Background & Problem description
Methods & Tools
Theory
Delimitations
Relevance for sustainability

Purpose & Exploration

This master thesis aims to challenge the conventional design of preschools, in order to create stimulating environments for children to grow and learn in. The intention is to contribute a hopeful addition to the current preschool discourse and show that the bare minimum is not good enough. This is done by embracing the Reggio Emilia philosophy and its views on the importance of the environment in relation to the people engaging with it. The thesis aims to incorporate wood building techniques and natural, sustainable materials in order to contribute to a sustainable building sector and also to create an environment in which the children naturally meet and engage with these materials. The aim is to bridge the gap between architecture and pedagogics, and lean into a transversal study from the design perspective. This thesis aims to fill in the research gap of translating the pedagogical approach into feasible architectural qualities and solutions. Rather than leaving it blank for the pedagogues to create the environment from material within the architecture, the aim is for the architecture to purposefully and intentionally be a valuable part of the educational environment.

Background & Problem description

87% of Swedish children between ages one and five are enrolled in preschools (Skolverket, 2023). Many children spend their entire days in preschools, growing up and learning within its environment. This makes it an important place, one that should not be sacrificed due to poor planning or in order to make budget cuts. The difficulty of estimating the sizes of upcoming cohorts has been raised for years. One quick solution has been placing temporary, rented barracks in various parks, school yards, and parking lots. During the 2000s, a third of newly opened preschools were placed in barracks (Grill & Sima, 2013). Recently, statistics show that the population growth is smaller than expected and, as a result, preschools will have to close (Sjödén Öberg, 2024). Yet, these temporary barracks that initially were meant to stay for a few years - but in many cases have stayed way beyond their lifetime - are still here and continuing to be built.

Gothenburg is no different. Temporary barracks - or pavilions, as they are referred to - are placed in various places throughout the municipality. No place seems to be safe. There is one right by Skansen Kronan (Lejonspärres väg 3), another in Slottsskogen (Ekedalsgatan 24), and just south of Chalmers Johanneberg campus there is one more (Orrspelsgatan 16). Moving out of the city centre one might expect the lesser density to allow for permanent solutions but, nevertheless, the barracks are there as well. As in the example of the chosen lot at Korsåsliden 29 in Tynnered, which has been accompanied by forty three rented modules since 2016 (Expandia, 2018). The temporary building permit will expire within the upcoming years. At the same time, Tynnered is expanding, with plans to build thousands of new housing and anticipating the need of eight new preschools with a total of forty five departments (Göteborgs Stad, 2022).

Research Question

Main Question:

How could Reggio Emilia approaches be implemented in the design of a wooden preschool in the context of Gothenburg today?

Sub-question:

How can design facilitate flexibility and adjustability for changing needs in cohort sizes? Can co-use of spaces be an option?

If children already today are placed in temporary barracks, what will happen when the demand increases? Is this the new standard? Is temporary all we can offer the upcoming generation? Rather than using temporary architecture to satisfy changing needs, could we look into flexible and adjustable buildings which can support multiple functions over time? And can this still be specific and purposeful enough to satisfy the needs of preschools? This thesis establishes the temporary facilities as a problem, and intends to contribute with permanent solutions which better support the educational environment. This is done with the Reggio Emilia pedagogical approach in mind, a philosophy which raises the importance of the preschool environment. The approach places the environment at the center, rather than as an issue left to be solved last minute, as in the case with the barracks. This thesis makes the statement that children deserve well planned, purposeful, permanent architecture. The assumption being that temporary and general architecture is not as beneficial for children as permanent and purposeful. In order to contribute with an example of mentioned architecture, this thesis proposes a permanent wooden preschool at the lot in Tynnered where Korsåsliden 29s förskola currently operates in temporary facilities. The existing preschool applies a Reggio Emilia approach to pedagogics (Göteborgs Stad, n.d.), which further motivates the choice to work with the philosophy in regards to the environment as well. This thesis takes inspiration from the pedagogical approach, its values, and applications within existing Reggio preschools. Further, it draws knowledge from Swedish policy documents and current preschool architecture, while questioning its applications and asking "Can we do better?". This is done by having a cautious approach to why certain recommendations are made. Is it for the best of the children, or are other factors at play within the recommendations?

Methods & Tools

Research is conducted through a mix of methods, in order to gain a wide perspective of information and knowledge. Two main concepts can be described as research for design respectively research by design, where the first aims to accumulate knowledge needed in order to begin designing, and the latter validates and uses the design process as a legitimate research method. These approaches will be intertwined and used simultaneously during the master thesis process. The following methods will be used:

Case studies of reference projects, aiming to collect knowledge surrounding existing preschool architecture and its needs, as well as accumulating information regarding wooden building techniques.

Study visits to reference projects and **interviews** with pedagogues working in the preschools in order to get a view of every day life in the preschools.

Literature research regarding the different topics mentioned in the theory section, in order to collect and make use of already existing knowledge.

Site exploration through visits and documentation, investigations of geodata, as well as daylight and greenery studies created using digital software.

Model creation and **drawing** as an iterative design step, gaining knowledge through trial and error, evaluating choices and outcomes.

Theory

The following chapter dives into the theory this thesis relies on. Theoretical references include preschool literature, the basis of the Reggio Emilia philosophy, and Swedish municipal and government documents regarding what is expected of a preschool. These have been the framework for what the project aims to achieve. Further references include reference objects, all different preschools, which have qualities in the formation of space, relevant for this thesis.

Delimitations

This thesis does not discuss the politics of the preschool system. Neither is it about solving the current issue of under staffing and large child groups within preschools. Architecture can aid or worsen a scenario where a preschool is understaffed, but buildings are not educated adults and cannot be expected to replace such.

This thesis is not about an economically minimalistic preschool, which again centres back to the politics of the preschool. The intention is not to please those who consider temporary barracks as adequate architecture for children. It is neither about comparing the economical aspects of renting barracks respectively building anew, although this subject is touched upon briefly.

The thesis does not handle facilities for other pedagogical approaches apart from Reggio Emilia.

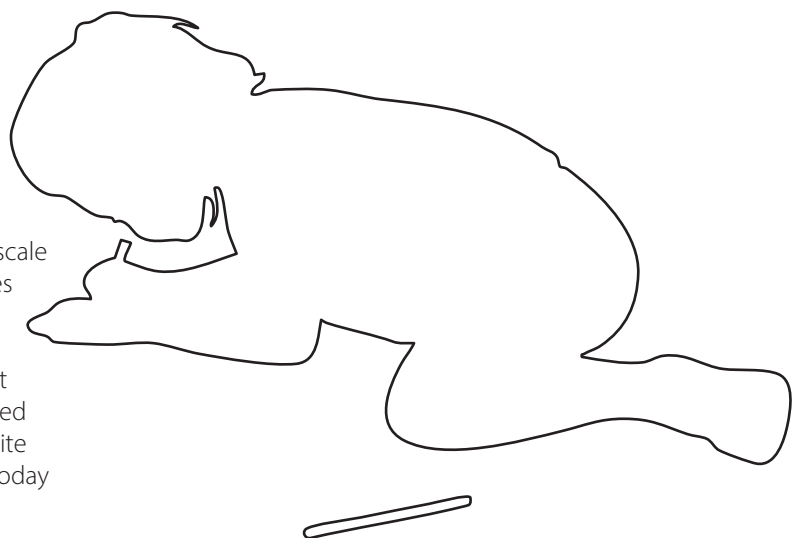
The city of Gothenburg's own framework for the planning and building of preschools is referenced, however if contradictions with Reggio Emilia philosophy occur, these documents are questioned and challenged. The focus lies on creating a space for Reggio Emilia pedagogics, with lesser emphasis on what the municipality is already asking for, as the thesis already has stated that this is not good enough.



Chapter 2

Theory

Development of the preschool
Reggio Emilia
The aim of preschools and governing children
Children's development & scale
Group sizes
Built references
Study visits
Interview with architect
Tynnered
Photographs of surrounding site
Site today



Development of the preschool

The story of Swedish childcare starts in the early 1800s, with the main purpose of protecting children from being exploited as labour. In the 1840s, the *folkskolestadga*, the statute about education of the people, established that every child had to participate in compulsory schooling. Yet, it would take forty more years until child labour was prohibited by law. By then *barnkrubbor*, or crèches, had been established as childcare centres for poor children whose parents (often single mothers) were labourers. The role of the crèches was to feed and take care of the children when their guardian was unable to do so, and had no pedagogical purpose. For the upper class, *barnträdgården*, the kindergarten, came around the turn of the century. Based on the philosophy of Friedrich Fröbel, the kindergartens intended to stimulate the children and be educational. The costs were too high for labourers to afford it, something the sisters Maria and Ellen Moberg challenged by opening up a pedagogical kindergarten for children of workers. In the 1940s the state took over the responsibility for childcare. Crèches and kindergartens switched to *daghem*, day homes, and *lekskolor*, play schools (Lindgren, 2019). In Italy, Reggio Emilia preschools had been started by parents and pedagogues after the second world war. In the 1960s, the first municipal Reggio Emilia preschool was started in Italy.

In the 1980s, the philosophy had spread to Sweden and the modern museum of art in Stockholm, where an exhibition was held (Moderna Museet, 2019). During the 80s, the state decided that every child had a right to attend preschools, and in 1989 the United Nations Convention on the Rights of the Child

became law. Around the millennium, the first curriculum for the Swedish preschool was formed. The state decided that every child between ages four and five had a right to attend *allmän förskola*, public preschool, cost free (Lindgren & Söderlind, 2019). From 2010, the cost free public preschool is guaranteed for children from the fall semester the year they turn 3 years old. In 2018, a new curriculum for the preschool was adapted. The curriculum states that the preschool should be democratic and the base for a growing interest and responsibility among the children to take an active part in society. The educational purpose is for the children to gain and develop knowledge and values which support human rights (Skolverket, 2018). The goal is no longer simply caretaking, but education and making space for children within society. Attending preschool is, however, completely voluntary and the compulsory schooling starts at age 6 when the child attends preschool class. Current political debate discusses obligatory preschool for children from age three, especially focusing on children living in areas with low socioeconomic standard and whose first language is not Swedish (Utbildningsdepartementet, 2024).

In conclusion, one could say that the purpose of preschools have shifted from simply caretaking to also including pedagogics. The focus has shifted from the needs of childcare for working adults, to the rights of children to an education from early ages. With this, the demands on the environment have changed from being home-like to one that offers pedagogical spaces. Preschools still hold the societal responsibility of childcare, and incorporates education within its caretaking mission.

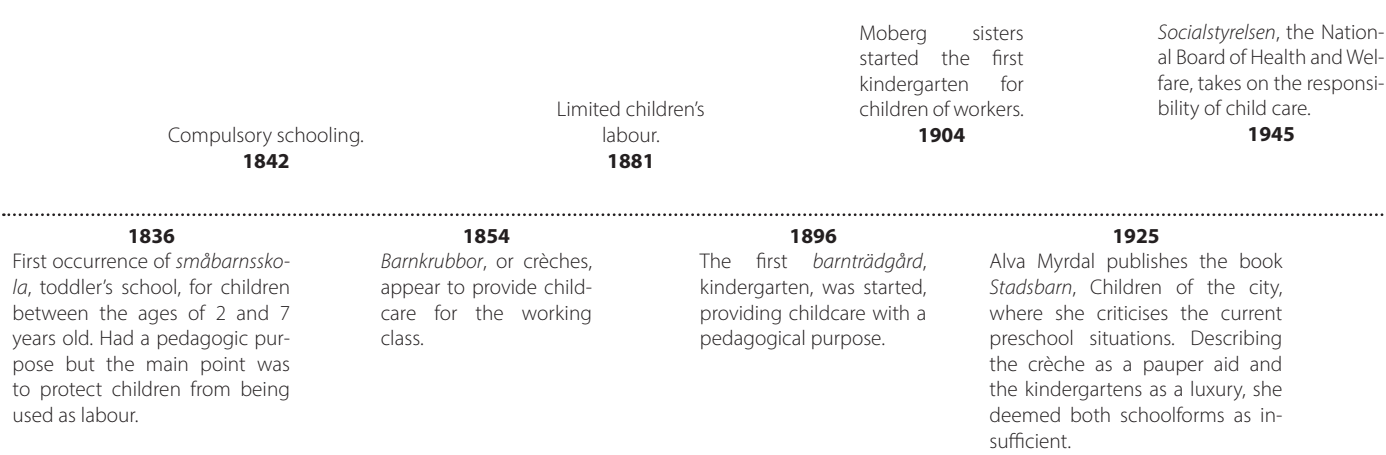




Figure 02. Interior of Engelbrekt's crèche. Toddlers being fed by caregivers in early 20th century. (Lamm, 1909-1913).



Figure 03. Children feeding each other at Adolf Fredrik's and Gustav Vasa's crèche in the 1940s. (SF, 1944).



Figure 04. Children at Sofia Husmoderskurs in early 20th century. (Unknown, 1913).



Figure 05. Children at Riksby preschool in the 1950s (Petersens, 1950-1959).

First municipal
Reggio Emilia
preschool is
formed in Italy.
1963

The government
decides on public
preschool for all
children
1985

Lpfö 98, first
preschool curric-
ulum is adapted
1998

Lpfö 98 was re-
vised and the age
for free preschool
lowered to 3 years.
2010

Political debate
regarding
compulsory
preschool
2024

1951
Day homes and play
schools replace crèches
and kindergartens with
their socioeconomic asso-
ciations

1981
The modern art museum in
Stockholm holds the exhi-
bition "*Ett barn har 100 språk.
Om skapande pedagogik på
de kommunala daghemmen
i Reggio Emilia, Italien*" and
interest in Reggio Emilia is
sparked in the Swedish con-
text.

1989
The United Nations
Convention on the
Rights of the Child be-
comes law.

2003
Public cost free pre-
school for children
aged 4 and 5.

2018
Lpfö 18, the cur-
rent curriculum
for preschools is
adapted

Reggio Emilia

NO WAY. THE HUNDRED IS THERE

*The child
is made of one hundred.
The child has
a hundred languages
a hundred hands
a hundred thoughts
a hundred ways of thinking
of playing, of speaking.
a hundred always a hundred
ways of listening
of marveling, of loving
a hundred joys
for singing and understanding
a hundred worlds
to discover
a hundred worlds
to invent
a hundred worlds
to dream.
The child has
a hundred languages
(and a hundred hundred hundred more)
but they steal ninety-nine.
The school and the culture
separate the head from the body.*

*They tell the child:
to think without hands
to do without head
to listen and not to speak
to understand without joy
to love and to marvel
only at easter and at christmas.
They tell the child:
to discover the world already there
and of the hundred
they steal ninety-nine.
They tell the child:
that work and play
reality and fantasy
science and imagination
sky and earth
reason and dream
are things
that do not belong together.
and thus they tell the child
that the hundred is not there.
The child says:
no way. The hundred is there*

- Loris Malaguzzi (1993)

Reggio Emilia Institutet (2023b) calls the movement a philosophical approach, rather than a pedagogic one. Reggio Emilia stems from the Italian city with the same name, as a women's movement reaction to fascism after the second world war, and was further developed by pedagogue Loris Malaguzzi. Aiming to eradicate antidemocratic movements by starting with the children, the pedagogic philosophy focuses on children's competence as valuable members of society. Rather than focusing on children's needs, it puts emphasis on their rights.

As the poem by Malaguzzi states, the approach extends the meaning of language to include the many ways one can communicate, represent, and express oneself. Nurturing the many forms of expression is a core part of the philosophy. Artistic and creative expressions are valued and included in every pedagogical project, just like the spoken and written languages usually are. This is done with the help of an *atelierista*, a staff

member whose educational background is in arts rather than pedagogics, and whose purpose is to develop and nurture the artistic work and take care of the ateliers. Further, important working ways include the use of long term projects which arise in collaboration between children and adult educators, with the educator as a researcher and active listener, documenting the work together with the children. Evaluation and discussion constantly occurs, and the design of the work is done together. The work is child originated, but framed by the teacher. Learning is done through socialization, the approach argues, and puts great emphasis on the children meeting in group but also meeting themselves. The groups are divided by age, and the Italian Reggio Emilia preschools welcome children between the ages of 3 and 6, while younger children between infancy and up to 3 years are in so-called infant centers (Biroli et. al., 2018), often placed in entirely different buildings than the preschool.

Finally, a core subject is the role of the environment, in which it is considered a central part of the education (Manera, 2022). Named the third educator, it is placed alongside the importance of the two other educators - the adult pedagogue and the collaborating children. The environment should be aesthetically inviting and offer the ability to engage in activities which promote learning, creativity, curiosity, and friendships. Room applications include piazzas, central meeting points for indoor meetings between groups, as well as ateliers for creation of materials (Reggio Emilia Institutet, 2023a). The Reggio Emilia preschool environment interacts and takes shape in relation to the educational projects and experiences happening within it. Maintenance and care of the space, its furniture and objects, is an educational activity that results in mental wellbeing, a sense of aesthetics and belonging, and the joy of inhabiting (Reggio Emilia Approach, 2022). The environment should provide the unexpected, introduce provocations, surprise children and start discussions. The approach translates the aesthetic into an ethic, materialising morality through everyday actions and choices. The constant value in the built environment of Reggio Emilia is its dynamic qualities and ability to change. The space is understood as responsive and transformative, and its inhabitants are allowed to leave imprints and transform the space (Domínguez, 2024). This includes move-ability of furniture, where children get the ability to change their own environment, as well as to engage in unexpected furnishings. Armchairs can be moved to the bathrooms, which Domínguez (2024) refers to as a subtle manifesto against the marginality of servant spaces. In short, move-ability creates unexpected results that engages and educates the children.

Scuola Diana, further investigated in the upcoming chapter, can be seen as a golden example of a Reggio Preschool. Atelierista Vea Vecchi worked in the preschool for 30 years and brought her husband, architect Tullio Zini, into the project. He, together with the teachers and atelieristas working there at the time, inspired much of the concept of aesthetics and the environment developed in Reggio Emilia (Márquez-Román & Soto Gómez, 2023). Zini was responsible for the architectural design as well as the creation of furniture. His work is strongly connected to the Italian neo avant-garde movement, which, like the Reggio Emilia philosophy, aims to avoid pre-defined aesthetic choices, in order to explore new relationships and connections (Manera, 2021).

Malaguzzi challenged false dichotomies such as art-science, child-adult, or privacy-socialization. The latter can be exemplified by seeing the child's right to privacy, to hide, lie down, and reflect, and providing subspaces within social spaces such as classrooms or the piazza. This can be a dress up tent, a triangle of mirrors, any form of micro architecture, or *grandi oggetti*. This enriches the duality of the space (Domínguez, 2024). Even the most public space can be private. Metaphors are a part of the educational environment. Material, toys, and rooms are deliberately left open ended to stimulate the child's imagination and creativity. The micro-architecture was originally not little

houses to play pretend in, but smaller spaces that could be a house, or a spaceship, or another world. The Reggio approach makes use of abstraction as a way to engage children. Minimalist design and raw materials are often used to allow the child's imagination to be the designer (Domínguez, 2024).

Transparency is seen as a main design principle of Reggio Emilia environments. However, Domínguez (2024) argues that glazed areas often are disturbed in some way to enhance critical curiosity within children. Regular windows are often used as a display space for the children's art. Something that Bartlett (1993) supports in an interview with Lella Gandini, where it is noted that creating exhibitions with the children's art is an important step in documenting it. Further, it is discussed how light is associated with a sense of well being. The transparency invites the outer natural world into the classrooms, connecting the children to nature. Domínguez (2024) addresses the blurring of in and outdoor spaces and its metaphorical meaning. Light and mirrors are part of the design, creating playful spaces and illusions which spark debate and imagination among the children. Bartlett (1993) describes how there is no marginal space in a Reggio Emilia school, as each space is considered important and decorated in some way. That includes bathrooms and the kitchen. Corridors are often avoided, and instead replaced by larger common spaces such as the piazza which connects the rooms. Loris Malaguzzi puts emphasis on the living connection between theory and practice, which is a base for the dynamic educational system within Reggio Emilia pedagogics (Rankin, 2004).

The Reggio Emilia approach puts emphasis on the context, not only of its environment, but of the people as well, by including the parents of children attending the preschool. By valuing the child as an important member of the community, and the preschool as an important place in the city, the local contact is inseparable from the preschool, one could argue. The environment does not need to mimic its surroundings, but it should interact and connect with it, creating opportunities for meetings. Reggio Emilia is an educational and cultural project, created in, for, and with the city. Therefore, it is impossible to create a model Reggio Emilia preschool that would work everywhere, since the heart of Reggio Emilia is the interaction and dynamic relationship with the people inhabiting the space (Márquez-Román & Soto Gómez, 2023). However, the above mentioned strategies and architectural qualities are still valuable, and looking at successful environments gives ideas of what brings value to a space. One could argue that the true Reggio Emilia preschools only can be found in its origin city, and that its applications elsewhere are merely adaptations. Which, perhaps contradictory, is a core element of the approach: how it adapts and develops with its environment - both physical and social.

The aim of preschools and governing of children

Andersson (2023) notes that while the goal of childhood spaces can be to protect children, it also serves as a way to shape children. As Andersson puts it, "Politically speaking the goal is to produce a better adult, to refine the human capital". This kind of governing is not authoritarian or suppressive, but a way to achieve what is considered desired and successful for both the general population and the state. In Sweden, the governing in preschools is predominantly ruled by Skolverket, the Department of Education, who writes the curriculum. Skolverket does not provide policy material for the architectural design of preschools, but it is mentioned and exemplified in policy texts how the environment can be used to aid the curriculum goals (see Skolverket, 2016a and Skolverket, 2018). Boverket, the Swedish National Board of Housing, Building and Planning, also provide inspirational texts on how preschools can be designed, as well as strict rules for things such as fire hazards (see Boverket, 2015 and Boverket, 2020). Andersson (2023) discusses material about Reggio Emilia inspired Hedlunda preschool (Boverket, 2020), investigating what and how the environment educates. The guidance material suggests that the environment itself organizes and inspires the children and their activities, Andersson argues, meaning one can assign disciplinary power to the environment rather than only to the teacher. The text further exemplifies that at Hedlunda förskola, material is stored visible and accessible for children, which would inspire activity. Thereby saying, according to Andersson, that children who cannot act independently will not be inspired to do the same activities. Policy documents promote nature as an emotional regulation technique to shape "correct" behaviour, Andersson argues, connecting it to the romanticized goodness and purity of both nature and children, as well as the societal idea of the binary contrasts between nature and culture, where the latter is understood as artificial and unnatural (Andersson, 2023). In connection to this, one can remember how Loris Malaguzzi challenged false dichotomies (Domínguez, 2024), such as nature versus culture. Andersson continues to analyse the presented problem of human-made play materials, which in policy documents have been connected to behaviour presented as unwanted. How, when discussing children waiting in line to use the swing set, the text describes it as passive, non-educational behaviour. While Andersson presents the alternative understanding of how this behaviour develops the important skills of having patience and waiting in line, which are fundamental in a successful society. Noticing this, one can argue that the Reggio Emilia ideas of the child as an independent, capable, democratic member of society can be limited by the standardised regulations. Putting two things against each other values one language, one form of expressing oneself and understanding this world, above the other. Children have a right to nature and culture, art and science, social meetings and self reflection. The Reggio Emilia pedagogical philosophy rose from the ashes of war and hatred, and very much aimed to shape and govern children into good democratic members of society.

However, the philosophy seems to argue that children already are that, and that adults and educational facilities need to shape less and instead value what children already are. This can indeed be tied to the idea of children as good and pure. It could be considered contradictory, but the Reggio Emilia approach intends to meet children where they are, and guide them towards moral goodness and intellect on their own terms. It is saying "let us learn this together", rather than "I as an adult know better, so I will tell you and you will listen". This line between too much and too little governing is thin. The above mentioned dilemmas create difficulty in combining the Swedish regulations and curriculum with the Reggio Emilia philosophy. The end goal is the same: to create good members of society. To educate, socialize and care for children. To give them space, hope, and a voice.

In Reggio fashion, one could re-frame this question of governing, and instead ask: what do children have a right to be? To become? To learn? To do? What should the preschool support them in doing, what is the end goal of the education given within the preschools? What should the educating environment contribute to? I have tried to answer this, by gathering thoughts from Swedish policy documents (see Skolverket, 2018, Göteborg Stad, 2014) and the Reggio Emilia philosophy, and translating them using the expressive language of poetry.

*Children have a right to move,
to climb, crawl, chase,
to fall, find, feel.*

*Children have the right to socialize,
to learn kindness and compassion,
disagreements and conflict.*

*Children have a right to express themselves,
to play, create, rebuild,
to sing and scream, to whisper and to laugh.*

*Children have a right to learn,
to access their potential, to become.
but also to be valued for who they currently are.*

*Children have a right to experience joy,
to feel angry and curious and giddily,
to express and feel it all.*

*Children have a right to the world,
to participate in it,
to be human.*

*To be everything and nothing.
To be anything.*

*The children were right
all along.*

"Children are not things to be molded, but are people to be unfolded."

- Jess Lair



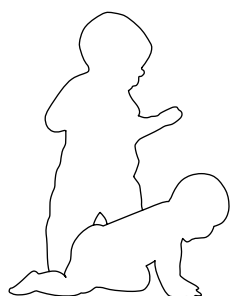
Figure 06. Drawing depicting happiness and friendship, made by a 3 year old (Bjuring, 2025). Original title "*Katt med matskål som är kompisar och de är jättegglada*". Scanned and adjusted digitally for print. Used with artists' permission.

Figure 06 shows a drawing made by a three year old preschool student, which shows their perception of happiness and friendship, by depicting two smiling individuals. One of them is a cat, the child says, and the other is its food bowl. They are friends and very happy. This image and explanation with it can give an insight into how children see the world. While I cannot see individual is the cat and which is the bowl, I see the joy and friendship within the picture. If I had stepped in while the child was drawing, and told them that cats have pointy ears, or that food bowls do not have faces, the image would be different. If the goal had been to depict only what is seen, governing and shaping could be to draw the shapes the child sees. When creating this piece, the artist-child openly expressed

themselves without limitations or instructions. They drew the feeling of happiness and friendship, and the food bowl and cat are shown as their emotions, not what they objectively look like. This piece can also remind us of the relationships children form with objects. Hultman (2016) describes how adults often forget the relationships to objects in favour of those to other people, regarding them as "stand-in relationships", that you have in lack of human company. Hultman argues that this is a simplified view of the world, and that it diminishes the child's fascination of the non-human world. Here, the artist gave the food bowl a smiling face, showing it as an individual one can be friends with.

Children's development & scale

Children can start preschool after turning one year old. There they spend their days until starting preschool class the year they turn six. A wide variety of ages where a lot of development is happening. All children are unique individuals and these developmental milestones are general and can occur earlier or later in the child's life. Some steps, such as crawling, are sometimes skipped altogether. Differentiating from the typical developmental phases can also be due to big changes in the child's life, disability, or premature birth.

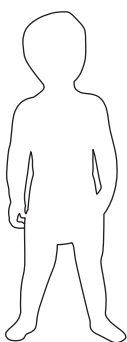


75 cm tall

Age one

Some children are crawling, while others have started standing up while leaning on furniture, and others are walking and running. The child starts to understand right and wrong and tests boundaries and their own limitations. Speech is limited and children mainly communicate through pointing, showing, and single word sentences. The child understands more, though. The child starts developing fine motor skills and picks

things up between their thumb and one finger. Exploration of the world moves from being mouth led to finger led. Children in this age will still put things in their mouth. Play is often an imitation of their every day life and what adults around them do. Most children sleep one longer period during the day and nearly all are in diapers.



88 cm tall

Age two

By age two, many children can run, climb stairs, and walk on their tiptoes. The child wants to do things by themselves and develop a sense of mine and yours. Communication evolves and children often speak in short sentences. They have not yet learnt how to handle strong emotions. Relationships with other children are more important and they often play independently next to each other. Most children sleep once

during the day and many use diapers, while some are starting toilet training.



95 cm tall

Age three

Three year olds run, jump, and want more space to move around in. They can dress and undress themselves, but might need help with zippers or tying their shoes. Three year olds are generally strong willed and curious. Speech develops more and multiple word sentences are often used. They start grasping the concept of time, before and after. Children are playing more together, often in smaller groups or in pairs. They play both with and next to each other, and often engage in pretend play and

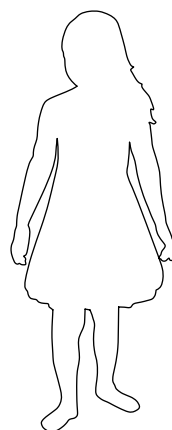
dress up games. Some still sleep a shorter time period during the day while others remain awake. Lots of children are toilet trained and can independently wash their hands. Some are still in diapers.



105 cm tall

Age four

By age four children jump longer, run faster, and climb higher. It can be hard to stay still. Speech develops and four year olds like to tell stories and talk to themselves. Children can often solve disagreements by themselves and are better at taking turns. They are better at understanding other people's perspectives. Pretend play and a large inner world lead to tons of play, but their wild imagination might lead to anxiety and fear regarding for instance going to the bathroom by themselves. Some nap during the day while most stay awake and do calm activities, and most children are toilet trained but need company or assistance.



110 cm tall

Age five

Many children learn to bike, but they do not have the quick responsiveness to safely be in traffic. They can follow the rules and play sports like football. Children can learn to tell the time, write their name, and recite their home address. They like to play in groups and mainly play pretend games. Most children do not sleep during the day, but might need to rest while doing calm activities. The child independently uses the toilet, but might need assistance with certain steps.

Group sizes

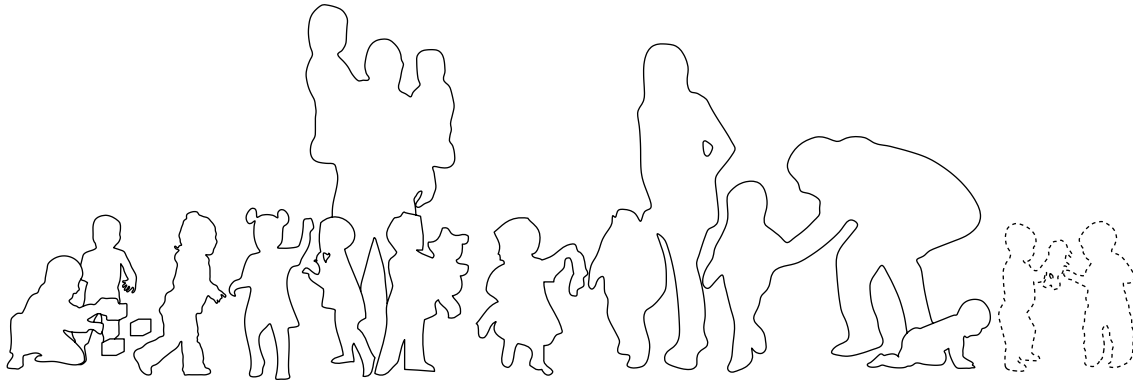


Figure 07. For ages 1-3 it is recommended to be 3 adults and 6-12 children (Skolverket, 2016b). The average group in Gothenburg has 13,7 children (Rosen, 2024).

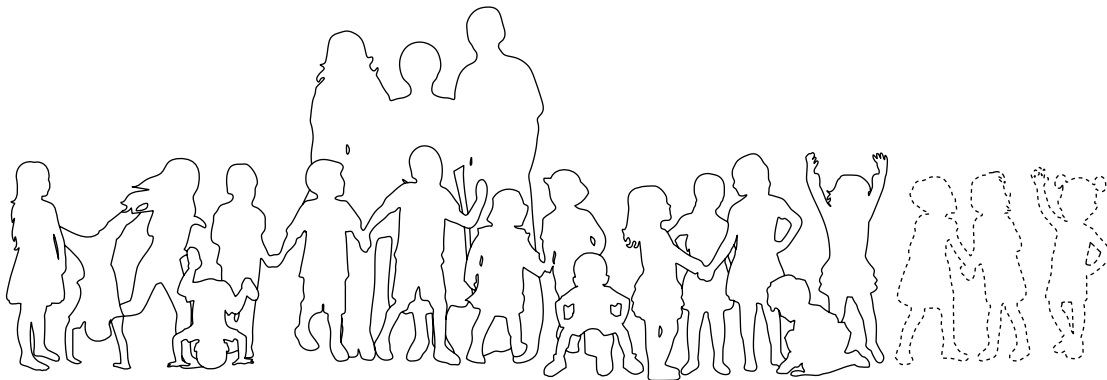


Figure 08. For ages 4-5 it is recommended to be 3 adults and 10-15 children (Skolverket, 2016b). The average group in Gothenburg has 17,7 children (Rosen, 2024)

As mentioned above, it is recommended that child groups are quite small and accompanied by three adults, while reality shows that groups exceed this recommended limitation. However, Skolverket (2016a) notes that it is not guaranteed that a group of eighteen children receives a lower quality of care and education than a smaller group. The environment, and its size and shape, has a large effect as well. A lot of preschools operate in insufficient facilities (Skolverket, 2016a), which creates further difficulties in regards to the group sizes. The facilities are not dimensioned for large numbers of people. Gatherings and play are negatively impacted by the noise and crowding created as a result of the large groups in these environments.

From a Reggio Emilia perspective, one can focus on its core value of education through socialisation, building and sustaining relationships. Functional groups are an important part of this. In an interview with Baji Rankin, conducted in 1990 and published in 2004, Loris Malaguzzi contemplates group sizes and the importance of a personal and individual relationship with every child. Activities with twenty children are difficult and risky, he argues, since they could tie down children in situations they do not accept. Adult pedagogues cannot properly see, listen to, and connect with individual children in large

groups. Children playing in pairs, or in an unity of four, is ideal according to Malaguzzi, for children to easily develop social skills and for the adult pedagogue to observe and learn from them. Small groups enhance the relationships between educator and child, and allow the educator to be responsive to the child (Rankin, 2004). Relationships and interactions among groups are equally important yet different than the relationships formed one-on-one. Perhaps contradictory, the group sizes at the Italian Reggio Emilia preschools are around 25 students, accompanied by 2 teachers (Biroli et. al., 2018). The groups are divided by age in their bases, but are encouraged to meet in shared spaces.

One can conclude that larger group sizes are not inherently bad and problematic, as long as the space they occupy is sufficient and suitable. In addition to large rooms for the entire group, there needs to be space to divide groups into smaller pairs or quartets. However, there needs to be enough adults in ratio to children to see, hear, and interact with every child. As Skolverket (2016a) and Malaguzzi (Rankin, 2004) both conclude, smaller group sizes are often preferable, but larger groups can work, if given the proper environment.

Built references

Råå förskola

Right by the coast in Helsingborg, in the southwest of Sweden, Råå preschool climbs across the landscape. In the east it connects to Råå Southern School, a school for children between the ages of 6 to 12 (year F-5). The unusual building volume connects to the rocks by the seaside and playfully adds to the pre-existing architecture surrounding the site . Four triangular skylights offer rich daylight in addition to that which is let through the windows of varying heights and sizes. The group rooms are divided by open plywood bookshelves, creating a shared yet protected space. A delicate handling of materials can be seen both in- and outside. The exterior is covered in robinia wood. It has been nominated to and won several architectural awards, such as *Träpriset* 2016 (Mandrup, n.d.). The yard is small and has received criticism for its lack of green space. Högborg and Kylin (2016) mean that the preschool architecture cannot be separated from its natural surroundings, and that while the building is inspiring and purposeful, the lacking outdoor space comes at a high price. Its playfulness and rejection of the built surroundings in favour of the connections to nature makes it an interesting reference. It is an ambitious wooden project which stands out but also simply fits into the space.

Location	Helsingborg, Sweden
Built	2013
Architect	Dorte Mandrup
Area	525 m ²
Number of children	90
Departments	4

Scuola Diana

Scuola Diana in Reggio Emilia, Italy, is a constant inspiration to educators around the world. It was named by *Newsweek* as one of the best preschools in the world (Kantrowitz & Wingerter, 1991), and is considered a great example of space for Reggio Emilia pedagogics (Bartlett, 1993). The materials are a reinforced concrete core and an exterior of masonry half-brick. (Fabbri, 2024). After being partially burnt down in the 1970s, parents, teachers, and children of the school collaborated with Loris Malaguzzi and the architect to recreate and improve the environment, looking at how the space was currently being used. More ateliers and private spaces were added (Bartlett, 1993). There are classrooms for each age group, with their own atelier and library. Toilets are located close to each classroom, reached through the common piazza. Part of the piazza is a dining hall, in connection to the kitchen where children are allowed in to help cook. Two atriums bring natural light into the bathrooms and the central piazza, opening up the space and bridging between in- and outside. The piazza is made to feel open and welcoming and hosts a neutral meeting ground for all children and adults. It is used as an architectural translation of Reggio Emilia values, and room applications are taken from here, as well as the interior glazing and general organization.

Location	Reggio Emilia, Italy
Built	1969
Architect	Tullio Zini
Area	785 m ²
Number of children	78
Departments	3



Figure 09. Plan drawing of Råå preschool in scale 1:600.
Drawn by author based on work by Dorte Mandrup (2013).

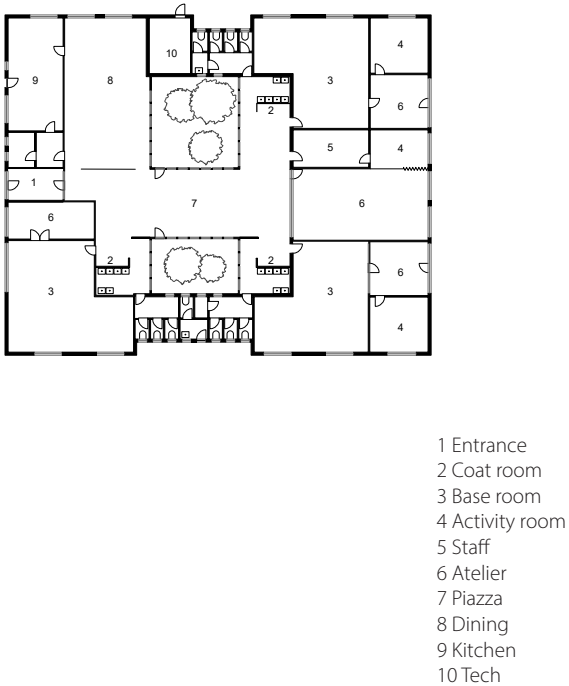


Figure 10. Plan drawing of Scuola Diana in scale 1:600.
Drawn by author based on Bartlett (1993) and Fabbri (2024).



Hoppet

Hoppet preschool in northern Gothenburg is a part of a larger municipal project aiming for fossil free and climate neutral building. The project has reduced its climate impact by 70% (LINK, n.d.) by weighing all design decisions by its environmental impact. The bottom slab is made of recycled glass rather than using concrete, and many building components have been reused from other projects. The interiors are clad in wood, which creates a neutral, natural, and warm atmosphere. The building is divided into three components, connected by a large glass room with ateliers in it, similar to rooms found in Reggio preschools. It is divided into two floors, and has two entrances meant for children and parents. Staff and deliveries enter through a separate entrance. The yard is designed by Mareld landscape architects and mainly consists of natural or repurposed play equipment. It is large and has lots of green areas for the children to play in (Gärde, 2021). Hoppet combines playfulness, environmental responsibility, and Reggio Emilia inspired spaces, with the efficiency and practicality of a municipal project. Materiality and the connections and separations between departments are of special interest.

Location	Gothenburg, Sweden
Built	2021
Architect	LINK
Area	1800 m ²
Number of children	144
Departments	8

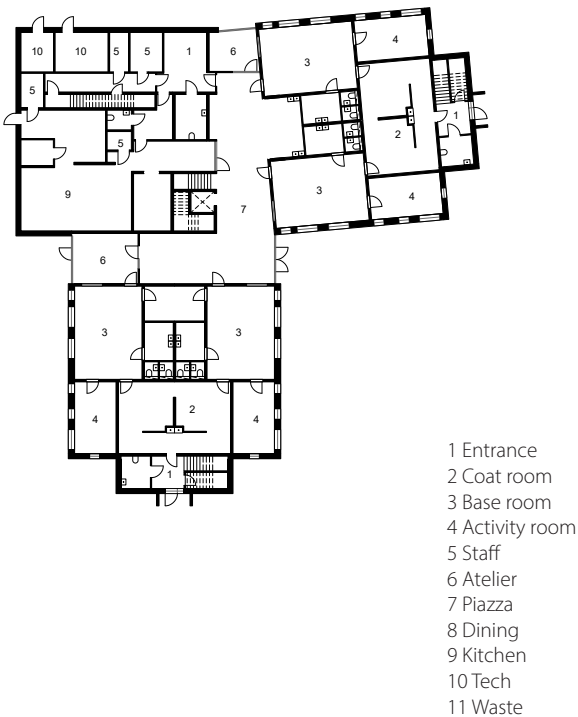
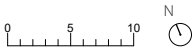


Figure 11. Plan drawing of Hoppet preschool in scale 1:600.
Drawn by author based on work by LINK (2021).



Hedlunda förskola

Hedlunda preschool in the northern city of Umeå, Sweden, adapts a Reggio Emilia approach to pedagogics, and the environment sustains that by offering shared spaces such as the piazza, ateliers, and exhibition spaces. The preschool is placed next to Hedlunda school, housing students between years F-6, allowing the two schools to share certain facilities. The initial plan was for the yards to be shared as well, however, that has not been implemented and as a result the open space available for each child is not enough to meet recommendations (Boverket, 2020). The exterior cladding is laminate panels with an oak wood pattern, in an effort to provide a sustainable, durable, and aesthetically pleasing facade with low maintenance. Windows have a deep sill to sit in and are of varying sizes and heights, creating a visually stimulating connection between in- and outside. The entrance into the shared piazza is glazed, welcoming visitors and bringing daylight into the very heart of the building. The building meets passive house standards. Hedlunda is a modern Swedish adaptation of Reggio Emilia, and for this project it serves as a bridge between the Italian Reggio Emilia architecture and the general Swedish preschool architecture.

Location	Umeå, Sweden
Built	2014
Architect	SWECO
Area	1600 m ²
Number of children	108
Departments	6

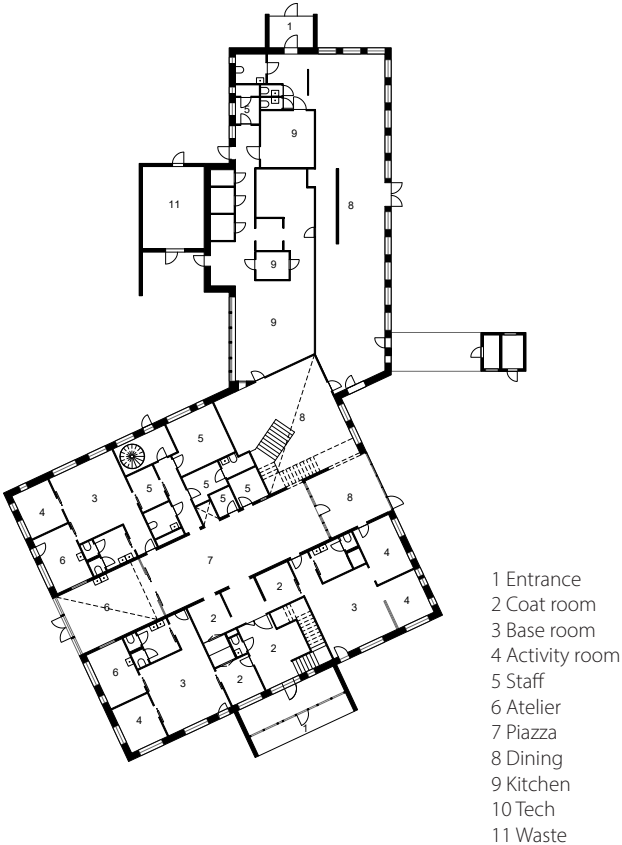


Figure 12. Plan drawing of Hedlunda preschool in scale 1:600.
Drawn by author based on work by SWECO (2015).



Study visits

Study visits were conducted on two municipal Reggio Emilia preschools within Gothenburg. The visits were done in the afternoon when children and staff were present. In connection to this staff were interviewed in a conversational manner.

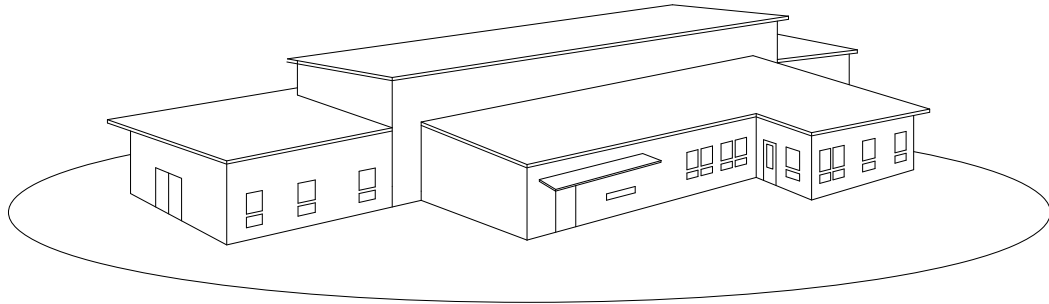


Figure 13. Outside perspective of Fiskebäck preschool, drawn by author.

Fiskebäck

In Fiskebäck, just west of Tynnered, Stora Fiskebäckvägen 101 förskola resides in facilities built in 2011, clearly inspired by Reggio pedagogics. I meet Linda, principal of this and another nearby preschool, who has been working with Reggio Emilia pedagogics for over two decades. She was there in 2013 when they switched facilities with another preschool, which did not have a Reggio Emilia pedagogical approach but rather an outdoors focused pedagogics (ur och skur). They had struggled to make this building work for them, but for the educators who worked with Reggio Emilia, the space fit perfectly. Children and staff enter through one common entrance, which leads to the large cloak room and the corridor which leads to all staff rooms. The space is exceptionally clean, even though dozens of muddy boots must have passed through earlier. The next room is the piazza, with double ceiling height and a stair up

to a loft in the middle. During lunch, carts are rolled out and some of the children eat their food in here, while others eat in their departments. The storage room right next to the piazza is filled to the brim, and overflows into the accessible bathroom next to it, which works as a storage instead. The staff spaces are small, insufficient in their opinion, and also overflowing with materials and furniture. Two departments share a smaller atelier, making it possible to open up between the departments and create one larger department instead of two smaller. There are windows everywhere, and Linda notes that the necessary lockdown drills are difficult to do, since there is nowhere to hide - a heart wrenching thought no one should need to have. On the other hand, the limited entrances and exits gives everyone a good overview of who enters the facilities.

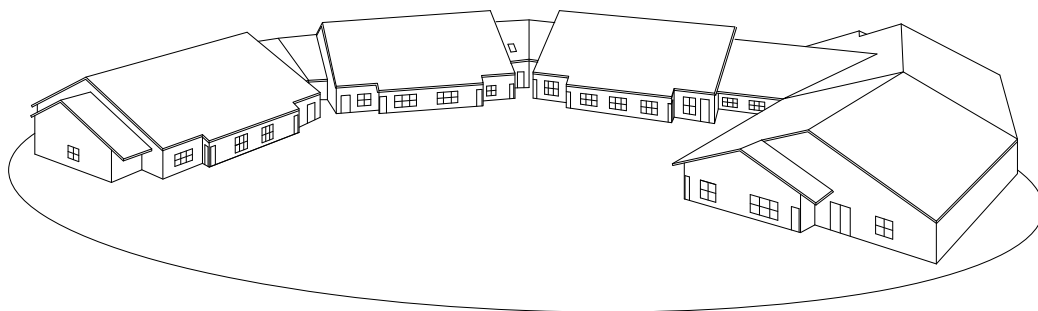


Figure 14. Outside perspective of Stella preschool, drawn by author.

Stella

Stella is a Reggio inspired preschool in Hisings Kärra, northern Gothenburg. Atelierista, artist, and university assistant professor Mia guides the tour through the preschool. The building bends around the yard, with departments arranged in a row, and a corridor running like a spine through the original building. The extension blends in modestly, and from the outside you hardly notice the later addition, equally playful in terms of shape, color and scale. From the inside, you can see organizational differences, where the departments share more space instead of having their own. Every department (or, in the addition, every two departments) have their own entrance and children eat in their own departments. The common meeting space for all children is the yard, which is the outdoor piazza. Like

inside, different rooms and divisions are created, with calmer and more active spaces. Mia has long term experience with the rise, fall, and reconstruction of Reggio Emilia preschools in Hisings Kärra. She discusses the fragile eco system in maintaining a Reggio pedagogics, and exemplifies by mentioning another preschool which had a beautiful interior piazza. Today, it is only used during meals, making it nothing but a dining hall. To achieve life in a rooms function and potential, continuous work is needed. Having the space is not enough. But having a space that allows for transformation, multiple activities at the same time, and which has nearby storage for room defining objects such as food carts, can aid in creating a living piazza.

Interview with preschool architect

To get a realistic perspective of how architects work with preschool projects in reality, I conducted an interview with Annika Hedebloom at KAKA architects, a firm which has drawn multiple preschools in and surrounding Gothenburg in the last years. Of these, at least three are inspired by Reggio Emilia pedagogics, equipped with piazzas and ateliers. KAKA's portfolio also includes the second preschool in the Hoppet project, Friedländers gata 20 in Backa in northern Gothenburg. A project where re-usability and sustainability was at the core, while valuing and prioritising good architecture. This interview takes place the third of February 2025, a few months before Friedländers gata 20 is planned to open. As preparation, I have visited this site as well as the ones in Ale municipality, and studied drawings graciously handed over by project managers. To start off, I ask general questions about the architect's role in the planning process, and how KAKA starts up a project and what their central ambition is.

We discuss the preschools done for Ale municipality, which I have great insight into as my child currently attends one and has been attending another. I visit the space as a parent, but also as an architect, and during my thesis I have had the opportunity to talk to educators, children, and other parents about the architecture. A point of interest is how the balconies are used. Nölbäcken preschool has two balconies - one connecting from the piazza out to the west and one in the south above the entrance, which connects to the stairwell and one of the departments. On the first floor there are two enclosed terraces in similar places. The first floor terrace in the south is used, I tell Annika, remembering how children have had barefoot dance parties and engaged in water play on it during warm days. On the upper balcony in the south, children sometimes stand and wave goodbye to their parents, and planting pots stand there with the remains of a dead flower in it. Otherwise, it seems to mainly work for storage for move-able drying racks which are unused and sticks found during forest walks. As a parent, this balcony mainly adds the much needed shade and rain cover for the entrance below, and the fact that my daughter knows how to climb furniture to push the electric key button on the wall and sneak out on the balcony by herself is worrying, rather than an asset. For the balconies from the piazzas they seem to always go unused. Which makes sense, as these piazzas are rarely used as a central meeting space, but rather functions as a dining hall. The food carts always stand in the middle of the room, defining it and limiting it to being a dining hall.

Further, we discuss how the preschool has divided the departments. It is planned for eight departments with 18 children each. The departments are paired two and two. The coat rooms are organised for this, with two rooms per department, as well as the departments themselves - two diaper rooms, two activity rooms, two nap rooms, and one larger atelier connecting these rooms together. However, in reality, each large department is used by three groups of 13 children, making the room logistics more difficult. In the end, it means that the atelier is not an atelier, but an activity room for the third group. Had the wish to organise like this been voiced during

the planning process, things could have been done to simplify this group division. While it seems illogical, it also shows the flexibility the atelier space offers - while it is not used as it was intended, it creates the possibility of this group organisation. This preschool is a great example of how the Reggio Emilia philosophy was used in the architectural planning stages, and how it works and supports a preschool environment which does not explicitly work with the pedagogical approach. While the rooms are there, they are not used as they would be in a Reggio Preschool, but it does not create problems in operating after another pedagogical approach in these facilities.

Another point of discussion is the material palettes, which if KAKA themselves choose often centers around wood. In the end, it is the municipality who orders the preschools who decide what they want. In the case of Nölbäcken, a large concrete building, flexibility and the possibility to add a third floor in the future impacted the construction and material choices greatly. To brighten up an otherwise quite boring facade material, patterns with forest and animal pictures were printed on the prefabricated concrete blocks. Around the entrance, the materiality changes to a warmer red wood, and the cold metal in the staircase. Adding further joy to the facade, the windows vary in size and shape, with some shaped as a pentagon or a house as the children say. Play equipment and the smaller storage buildings on the lot are mainly wooden, bringing the materiality to the smaller scales.



Figure 15. Photograph of facade of Nölbäckens förskola, showing the patterns printed in concrete and the playful window shape. Photograph by author.

Tynnered



Figure 16. Map of Tynnered, with Tynnered/Grevegården/Opalatorget marked out and the tram line. Site is marked out in pink. Based on geodata from Stadsbyggnadsförvaltningen (2020) and illustrations from Polismyndigheten (2023). Scale 1:10 000

Tynnered is located in the south western part of Gothenburg, part of the urban area Southwest. Approximately eight kilometres from the city centre, a journey which takes around half an hour by tram. Important connections are also the roads crossing Västerleden to Frölunda Torg in the north, which includes walkways, public transport and roads. The sea is close to the south and west. The larger urban area Southwest had in August of 2024 roughly 125 000 inhabitants (Västfolket, 2024), and the smaller area Tynnered, Grevegården, Opalatorget had 10 500 inhabitants in 2023 (SCB, 2023). This area is labeled a risk area, a place with low socioeconomic status where criminals have an impact on the local community. A few years back, it was considered a particularly vulnerable area, and since then the status has improved slightly. The homes within this area are mainly apartments in large complexes. The row house neighbourhood in the south of Ängåshöjden is excluded from this area.

Many buildings were built as a part of the Million Program in the 1960s and are accurate representations of the architecture which was built then. The neighbourhood on Ängåshöjden is mostly car free, with vehicles able to access the lot in the south. Right by this road is the chosen lot at Korsåsliden 29.

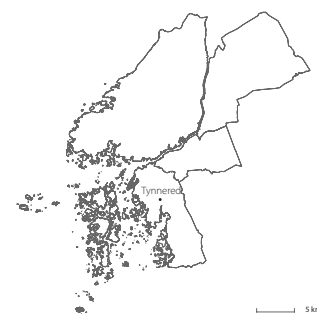


Figure 17. Map of Gothenburg with Tynnered marked out. Scale 1:1 000 000

Photographs of surrounding site



Figure 18. Western entrance of Tynneredsskolan



Figure 19. Mosaic staircase west of site towards Tynneredsskolan



Figure 20. Tynneredsskolan from south east



Figure 21. Playground with wood figurine by Briljantgatan



Figure 22. Residential row houses south of site



Figure 23. Green spaces just north of site



Figure 24. Sitemap of location as it is today, with the current temporary preschool barrack still on the lot. Showing where photos in figures 18-23 on previous page are taken. Scale 1:1000.



Chapter 3

Project



Project
Space program
Siteplan
Floorplans
Elevations
Material
Sections
Furnishing
Construction principle
Detail drawings

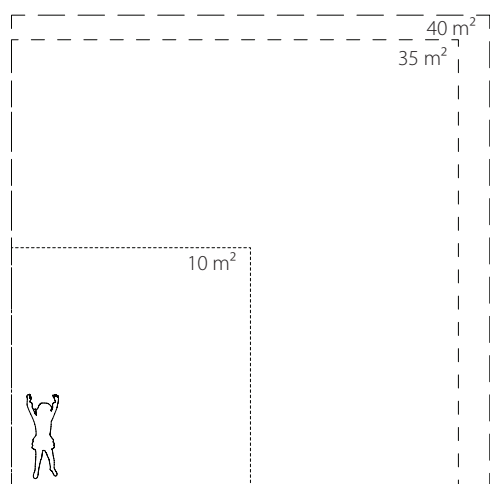
Project

The project is a preschool for 144 children divided over eight departments. It is located at Korsåsliden 29 in Tynnered, southern Gothenburg. There is currently a preschool operating on the lot in temporary facilities. This preschool works with Reggio Emilia pedagogics. The goal of the project is to draw a building that supports the educational environment and deliver good architecture to the children and residents of Tynnered. The lot is large and close to nature, giving it large possibilities for development. Tynnered is a risk area, an area with low socio-economic status where criminals have an impact on the local community. This anti-democratic societal collapse is what Reggio Emilia was created to combat. Placing purposeful and beautiful architecture aimed for children in an area like this can have a positive impact on the local community, which made specifically this area interesting for this thesis.

The space program is an approximation based on reference projects, guidelines, and current research. The numbers are based on 144 children divided into 8 departments, resulting in 18 children per department. This is based on the reality of group sizes. The municipality of Gothenburg plans 10 m² per child indoors, and 35 m² outdoors (Göteborgs Stad, 2014). The square metres indoor refers to the main usable area (LOA), and includes staff areas. The pedagogical space which is available to the children is smaller than this. Boverket (2015) considers 40 m² per child outdoors to be reasonable. These numbers are not legal requirements but recommendations. The numbers are set to ensure the facilities provide enough space for the activities it should provide, but also to keep a realistic economy within the project. It is a planning tool and not necessarily a mark of quality. The lot is 6500 m² large and mostly flat. The nearby lot in the east is a steep forest, which could be included in the project area if necessary. The surrounding neighbourhood is expanding and unused outdoor areas are valuable for the public or nearby schools.

The city of Gothenburg (2014) declares that new preschools should consist of at least four departments, but six or eight departments is even better. The municipality adds that an even number of departments work well when sharing spaces, such as entrances. The municipality anticipates a need for 45 departments divided over 8 preschools in Tynnered (Göteborg Stad, 2022), which would mean that each preschool should have around 6 departments. The location close to other educational instances, nature and residential areas motivates a slightly larger preschool of eight departments. Dividing these departments over two floors can be an efficient solution, and when comparing it to the amount of free outdoor space, it is often necessary. In Reggio Emilia, children are encouraged to be divided by age in their departments and have common meeting spaces. This would result in at least five departments. Many Swedish preschools divide the groups into younger (1-3 years) and older (4-5 years) children. In Italy, the infant centers for ages 3 months up to 2 years, and the preschools, from 3 to 5 years, are often in separate buildings. Dividing the children in two floors divided by younger and older ages is therefore not an issue.

Preschools of this size have their own cooking kitchen (Göteborg Stad, 2014). A delivery entrance, preferably separate from the children's entrance, is needed. According to Gothenburg municipality, Children's entrances should be separate from deliveries and traffic to decrease the risk of accidents. The entrances should be inviting and support children's independence. Two departments per cloak room is a good idea. Each department should have 24 spaces for children & 4 for adults (Göteborgs Stad, 2014). For Reggio Emilia, the entrance is the space where parents, pedagogues and children meet. It can be shared by the entire preschool. The entrance is also the transitional space between outside and inside, and home and education. It needs to be welcoming and open, and facilitate for children to be independent. Each department needs their own base room, a space for rest, and a separate bathroom to minimize risk of infections spreading. In general, there needs to be at least one bathroom per 10-15 children, as well as bathrooms for staff only. Dining can be done inside the departments or in another room, such as a dining hall. Reggio Emilia pedagogical facilities have ateliers for artistic expression and a piazza for meetings between everyone visiting the preschool.



Recommended square metres per child indoor (dotted line), and outside (short dash, Göteborg stad and long dash, Skolverket) illustrated in scale 1:100.

Space program

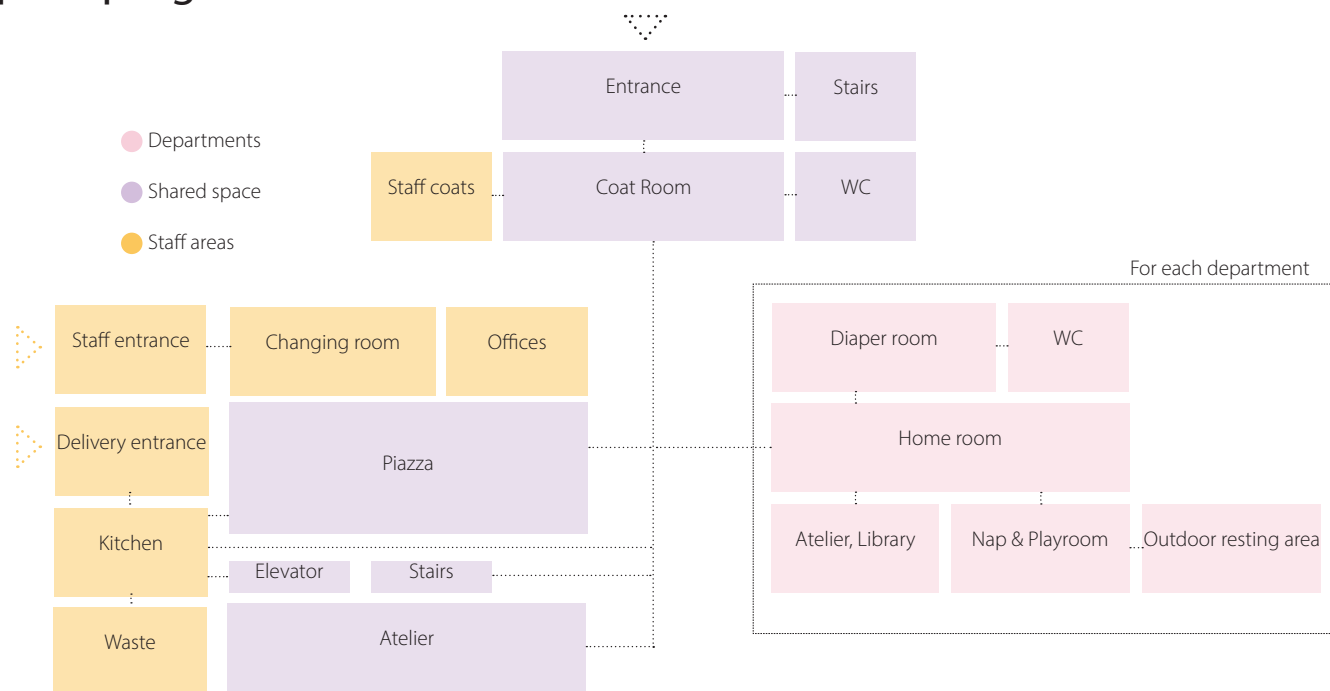


Figure 26. Graphical space program and their connections, not to scale

Children

Room Type	Amount	m ²	Total m ²
Entrance	4	10	40
Coat room	8	25	200
WC	20	3	60
Diaper room	8	5	40
Home room	8	40	320
Nap Room	8	20	160
Piazza	1	100	100
Atelier	4	30	120
Storage	4	5	20

Staff

Room Type	Amount	m ²	Total m ²
Entrance staff	1	5	5
Coat room staff	8	5	40
WC staff	5	2	10
Changing room	1	10	10
Offices	6	10	60
Storage	3	5	15
Kitchen	1	90	90
Deliveries entrance	1	10	10
Waste	1	10	10
Cleaning	1	5	5
Tech	1	100	100

Total indoors m² 1400

Outdoors

Room Type	Amount	m ²	Total m ²
Outside nap area	8	10	80
Trolley parking	1	10	10
Storage	2	10	20

	Children	m ²	Total m ²
Open space min or	144	35	5040
Open space max	144	40	5760

Site plan



Figure 27. Site plan of proposed design and surrounding yard in scale 1:500



Site plan

The old road in the south is replaced by expanding the existing bike path towards north. The road is wide enough for parents to park in it while picking up and dropping off their children. Staff parking lots and a delivery zone are placed in the north of the lot. From here delivery and kitchen staff enter the building through their own entrance. A fence with bushes separates the parking lot from the yard. The stroller storage by the entrance frames the path. One can still see through the space between the building bodies, hinting at what is to come once one rounds the corner and enters the lot. The main entrance is connected to the parking lot in the north. Here, children and staff can enter, or they walk around the building and enter through the separate entrances of the departments. There are two gates from the outside to the yard, one by the main entrance and one in the south. The second floor is accessed from the outside through staircases towards each coat room, or through a staircase in the central piazza. The departments on the bottom floor both have outdoor access directly from their atelier. A wooden deck surrounded by a fence, so that one can walk out on it without shoes and extend the atelier to the outside.

The yard is divided into three zones: the first being calm and close to the building facade. The southern yard embraces nature, with a nature path and obstacle course. There is a lot of open space, perfect for running around, playing football, or digging in the soil. The third yard in the north east is closely connected to the school yard nearby, and it is steeper and more accessible for children who are secure in their motor skills. The yards are separated by a see through fence with two gates, making it possible to open up if multiple yards are to be used at the same time. Paved paths slither through the yard, creating a lot of space to bike or run on. While all yards have separate purposes, they all offer activity, calmness, and nature interactions. The outdoor sheds work as storage for outdoor toys, wind and sun protection for outdoor seating, and they create a surface to put up work on. Sun protection is mainly controlled through the buildings, a pergola over the sand box, and the trees planted throughout the yard. The forest provides large shaded areas in the east and south during parts of the day.

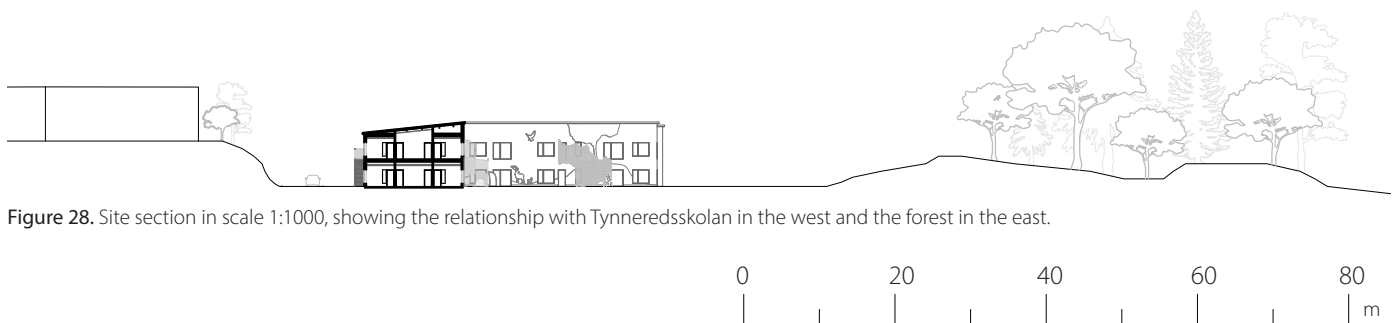


Figure 28. Site section in scale 1:1000, showing the relationship with Tynneredsskolan in the west and the forest in the east.

Entry floor

- Departments
- Shared space
- Staff areas



Figure 29. Entry floor, scale 1:250

The main entrance has a direct view through the piazza and out to the yard on the southern side of the building. The piazza is the central heart of the building, connected to all departments as well as the kitchen in the west. A small student kitchen connects the spaces, with windows into the large kitchen and an opening towards the piazza. Here, children can cook and prepare food together with pedagogues. It is an easily close-able space where a baby gate can be put up in order to make it inaccessible for the youngest children. The staircase up to the second floor is wide and open, with the intention of not closing it with a gate, but rather allowing the children to move between the floors freely. While walking up the stairs the children can look down on their peers through a window. Under the stair is a little hiding place with a window out to the main entrance, where children can wave goodbye to their parents.

The first floor is inhabited by four departments, all for younger children. In the south departments *Kotten* and *Knoppen* share an entrance. The coat room is connected to a large storage and cleaning supply room. The corridor leading to the piazza has a deep window sill for children to sit in while waiting for their friends to finish getting dressed to go outside. The door in the west is glazed and can be used to access this part of the yard, maybe to have shaded play time in the mornings, or to have outdoor rest. The coat room is separated in the middle with a move-able coat rack to create two different rooms, one for each department. These coat racks come in groups of three or four, and fit within the drying rooms, so that one or two coat racks can be removed and the room refurnished to facilitate different group constellations.

The home rooms connect to the coat room through large windows, where current art projects can be displayed. Each department has their own diaper and toilet room with a sliding door. The smaller room for rest or activity fits enough mattresses according to the municipal guidelines. When not used for sleep, the mattresses can be stacked and shaped into a couch for reading on. The shared atelier connects the departments, making it possible to have the paired departments as one unit. It allows the children to meet each other in a creative space. This room is also equipped with a small kitchen, for fruit or snack time. The wooden deck outside of the atelier invites children out and extends the room when the weather allows for it.

The northern departments, *Fröet* and *Roten*, are identical to its southern counterparts, with the exception of the added atelier towards the piazza. This atelier is shared by the entire preschool and its close connection to the piazza makes it accessible for many kinds of activities.

The kitchen has its own delivery entrance by the main entrance, and access to the recycling station by a separate door from the kitchen.





Figure 30. View of the first floor piazza and the main entrance.



Second floor



Figure 31. Second floor, scale 1:250



Figure 31. View into the atelier from the top of the stairs in the upper piazza.

The second floor is meant for the older children. Departments *Stammen* and *Grenen* share the southern part and *Lövet* and *Kronan* the northern. Note that all departments are equipped with a changing table, and with the same window sill height, despite the varying capabilities of different ages. This is to make the space flexible enough so that any age group can be anywhere, and also to facilitate for and attend to every individual child and their rights. This is also a demand from Gothenburg municipality, that the departments are not too age restrictive.

The upper floor is accessed through the staircase in the piazza or from the wooden staircases by the yard. The southern department has a separate fire escape route in the west, since the way through the staff room cannot be expected to be unlocked and accessible in case of fire. The staff zone is in the same space as on the first floor, with offices, a changing room, and a break room. The room between the southern coat room and the staff space is intended as a flexible room for storage, meetings, or child activities - whatever is needed at the time. Therefore, it is equipped with windows even though it might only be used as a storage.





Figure 33. View of atelier on the first floor.

Atelier spaces are spaces for creativity and inspiration. Here, the atelier on the southern wing on the first floor is shown, and the patio can be seen through the window. This space is for the department pairs to share and do what they wish with. On the second floor, this space reaches up to the roof, without a suspended ceiling. This creates a generous exhibition space on the walls and from the ceiling. These ateliers are also furnished with a smaller kitchen which allows for smaller meals to be shared on the patio or inside the atelier. The ateliers were placed so that one could walk through them, but would not *have to* in order to reach other important spaces. This was to make sure that projects could be left and continued another time without disturbing the rest of the activities taking space. Paintings can be laid out to dry without someone stepping on them, perler bead creations be left to be ironed without anyone bumping into them when running around. The space is meant for pure creativity.



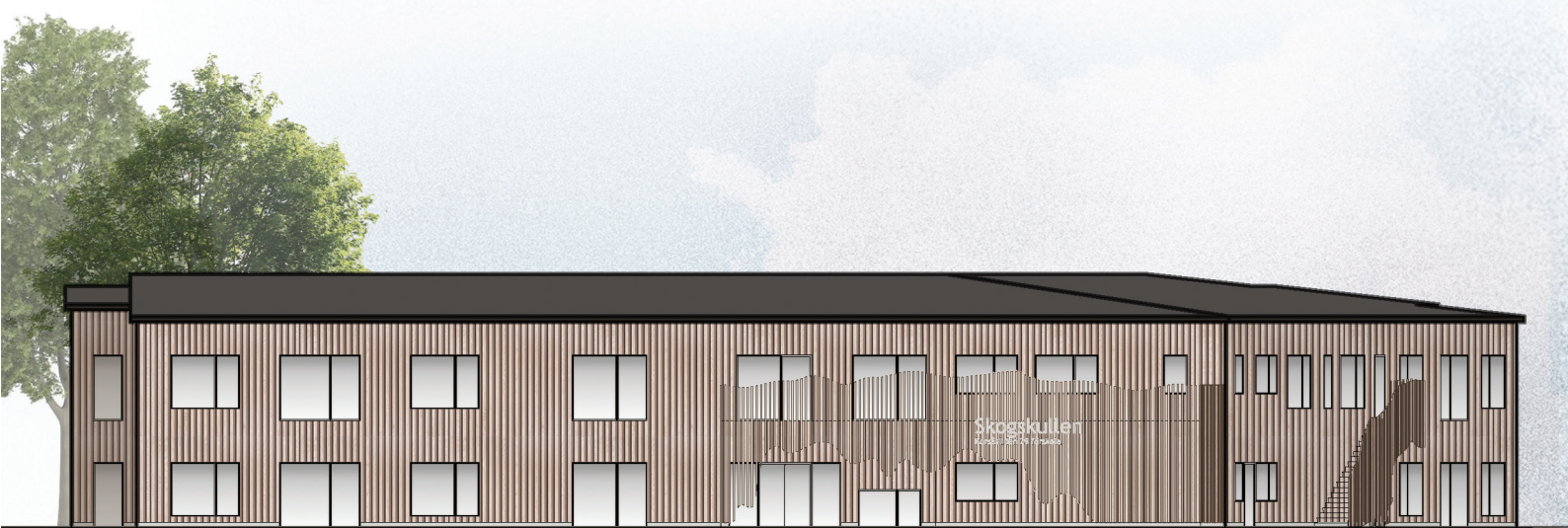
Figure 34. Exterior view of southern facade, including the patio outside the atelier



Figure 35. Section view of southern wing.

Elevations

North-West



East

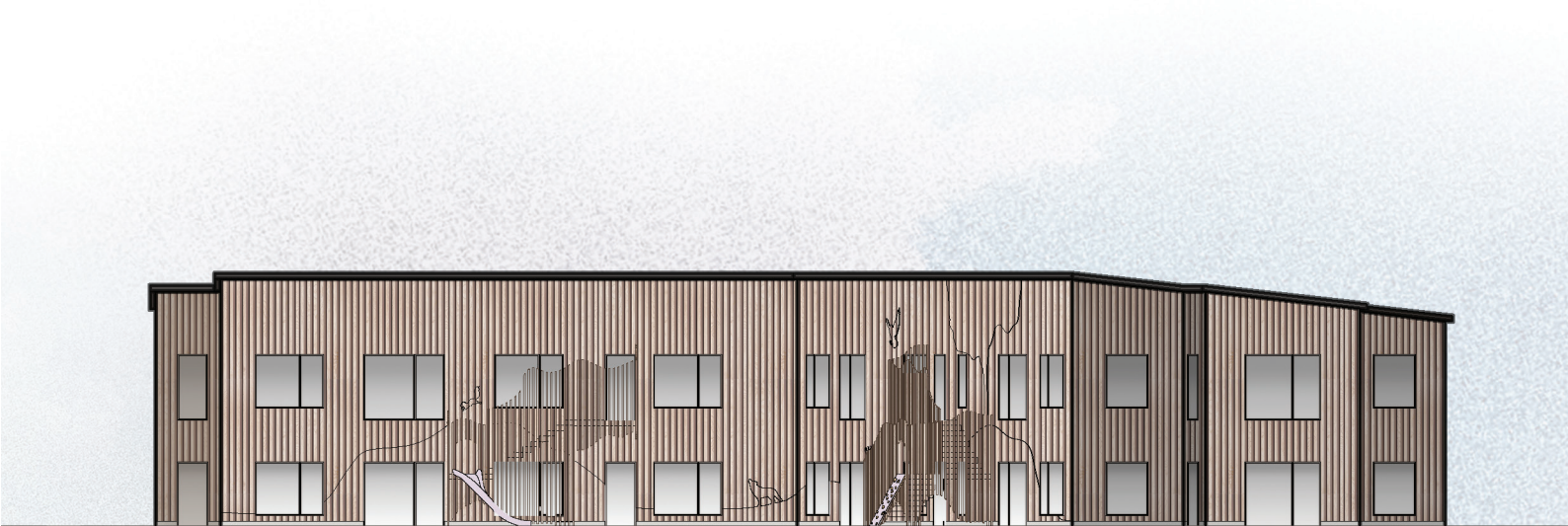
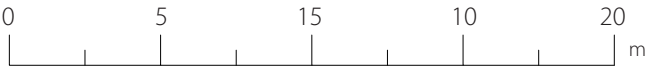
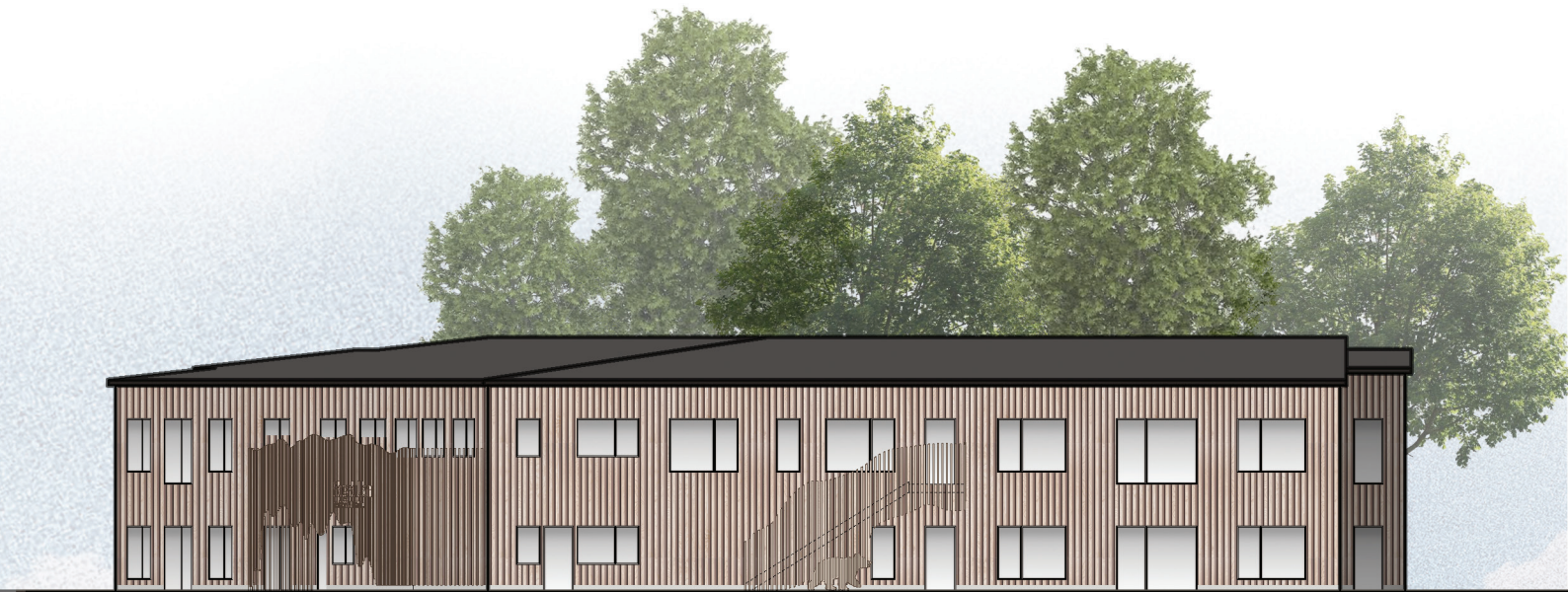


Figure 36. Elevations in scale 1:250

South

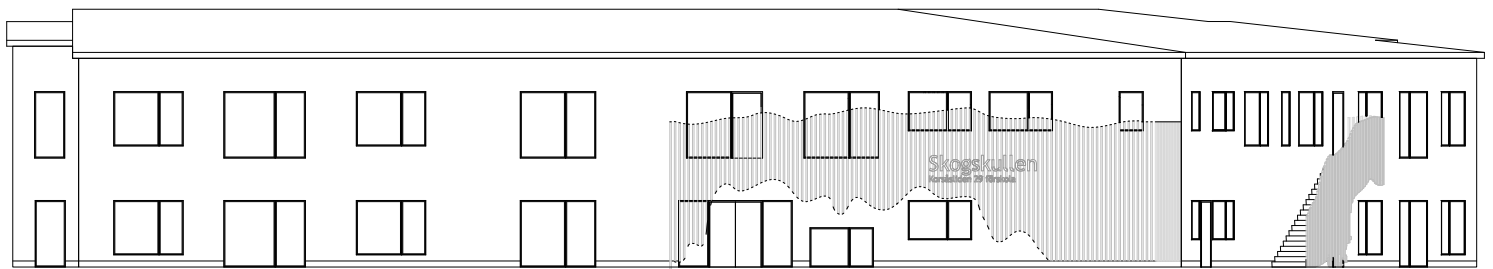


West



Elevations

North-West



East

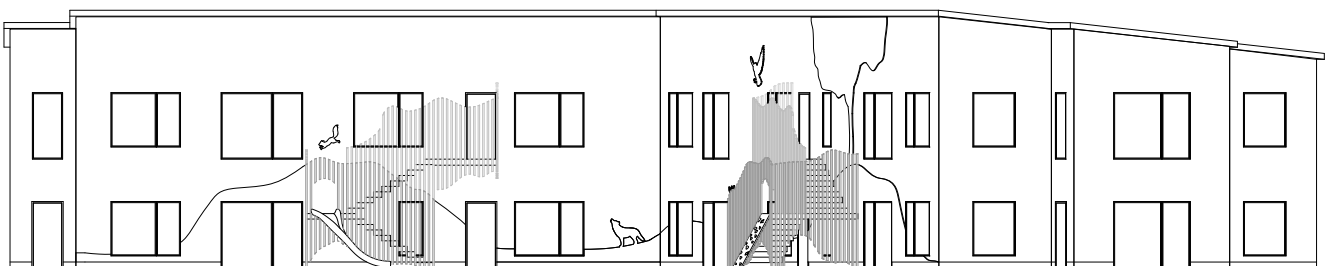
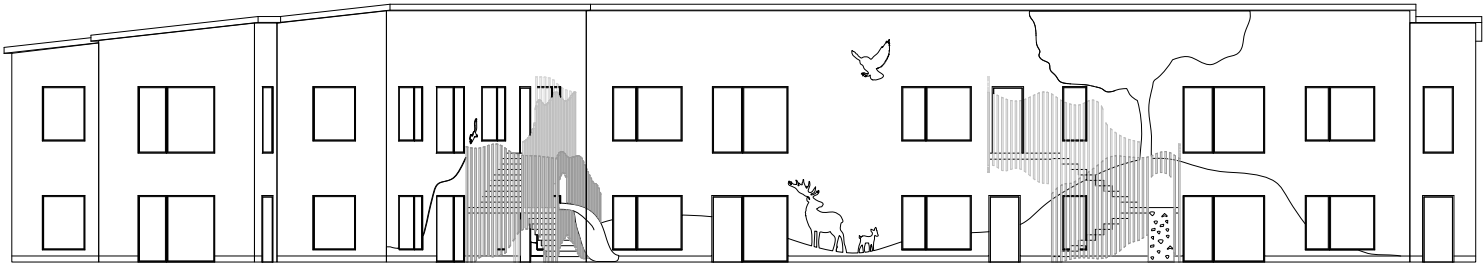
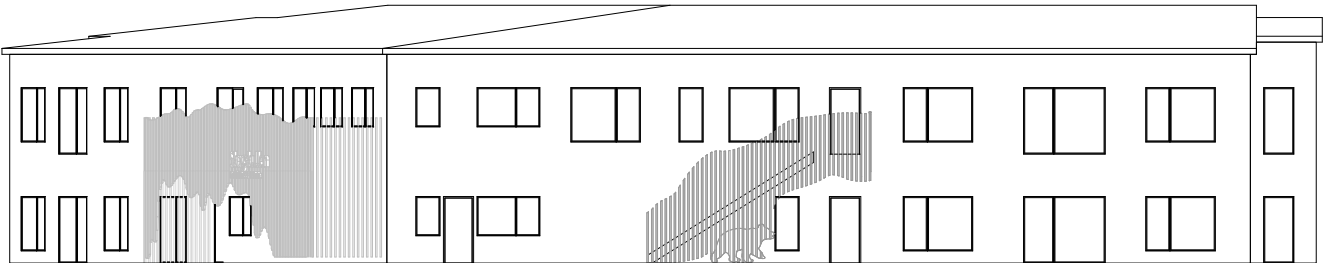


Figure 37. Elevations in scale 1:250, linework only to show facade pattern and shape of the staircase railings clearly.

South



West



Facade & storytelling

A polished steel mirror backsplash meets the ground, a metaphor for how the built environment imitates nature, different yet the same. It provokes thought for the children, who will meet this material close up. Is the building flying? How did my boots end up on the wall when they are on my feet? Will putting mud on the mirror make my boots muddy, too? In some spaces, the polished steel gets a ripple effect, imitating water in another materiality.

The vertical wood panels which cover the rest of the facade create the shapes of different forest animals. This technique, further illustrated on page 57, is similar to one used in Erlebniss-Zoo Hannover by architects pape + pape, where large animal bodies disturb the vertical raster pattern. Further inspiration has been Nolläckens förskola, earlier mentioned on page 25, where the facade is used as a storytelling element to connect the preschool and its named departments to the building. The facade is inaccessible to use as a display area for the projects within the preschool, and is instead a perfect surface to exhibit other kinds of art or decorative elements to the children. The

pattern is inspired by the Swedish forest and its animals, leaving something for the children to recognize themselves and their own environment in. The preschool is called *Skogskullen* as it is right by the forest hill in the east. This further connects the facade and the storytelling going on there to the preschool and its departments. Early iterations of the facade pattern had a more intricate pattern with details and connections to the department names, however this was abstracted along the way. Another reason for this abstraction and simplification was that this technique would not be economically feasible with a very detailed pattern, and having the actual wood raster and the three dimensional effect of the pattern and its shadows was more important than the detail level. One could have chosen to print the pattern on facade elements, similarly to how it is done in Nolläcken, but I argue that this would be like handing children a plastic cup rather than a glass one. It communicates distrust, a belief that the real thing cannot be maintained and handled. They get wood imitating animals. Not another material imitating wood imitating animals.



Figure 38. Exterior perspective of the main entrance and the wooden railing imitating a flowing landscape.



Figure 39. Exterior view of a child discovering shadows of the wooden raster and the reflective metal

Exterior materials



Figure 40. The facade is clad in unpainted wood (A), with 50 mm wide and 22 mm deep batten boards covering the backboards. In some places this pattern is disturbed by the storytelling facade pattern. In other places, it is up and aligns with the raster wood railing in the stairs (B) and on the northern balcony. The roof is dark metal (C), subtly hiding solar panels if those were to be installed. Where the facade meets the ground, a reflective metal sheet protects the wood from splashes and water damage. This metal is rippled in certain places, imitating water (D).

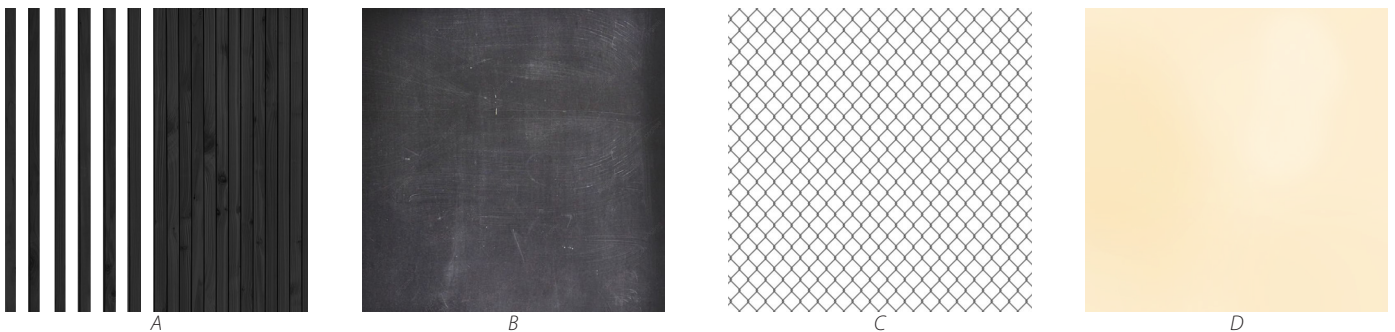


Figure 41. The sheds are clad in standing wood panel, similarly to the main building. They are black, and will be a warm surface to rest against in the sun. This also allows for blackboards (B) to discretely be installed, allowing the children to paint on the walls. The fence (C) is 1.6 metres high around the lot and difficult to climb, following municipal rules. Between the yards the fence is smaller and still wire, to let the children see through it and connect to each other. This sort of fence is also easy to fasten things to, to weave on, poke sticks through, and play with in different ways. In addition to wood, children also meet plastics (D) in the play materials, such as the slide going down the southern staircase. This is to offer children the whole world - not just the natural one with wood and stones, but also colour, culture, and synthetic materials. When choosing which material is to be put where, the experience for the children is put first, making sure that the material choice does not send another message. A plastic slide is smoother to slide on than a wooden one, while a wooden swing seat is more pleasant to touch than a plastic one. It is not one over the other, but each where they fit - aesthetically, functionally, and experience-wise.



Figure 42. Ground coverings in the yard, moving from hard asphalt (A) for the biking paths, and a paved stone (B) by the entrance, to softer sand and gravel (C) for nature paths and play grounds, to the wood chips (D) on other play grounds. Children meet these coverings in movement and play and the yard aims to offer a variation of sensory experiences.



Figure 43. Exterior view of the yard with the eastern and southern facade in the background.

Interior materials

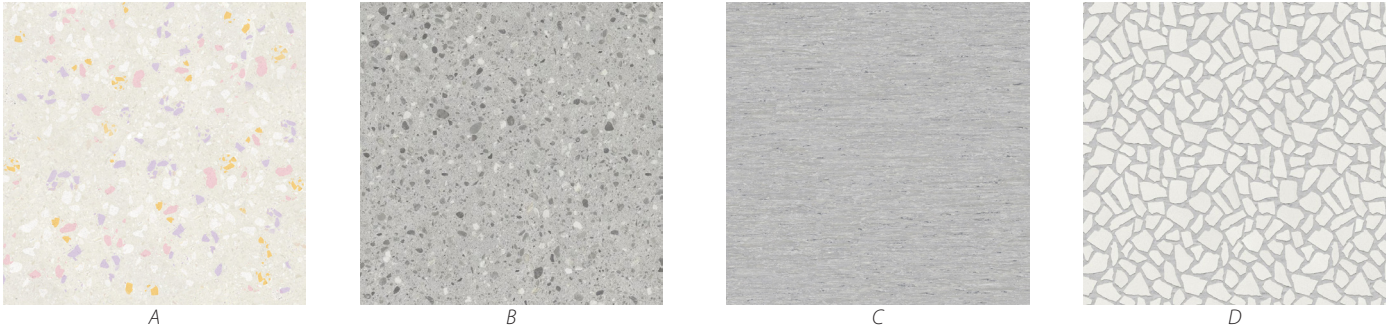


Figure 44. Materials for floor, durable linoleum carpet (C) inside departments and PVC terrazzo look alike flooring in the piazzas (A) and the coat rooms (B). The terrazzo subtly camouflages sand and dirt that inevitably will end up on the floor. The colourful choice in the piazza is to elevate and bring joy into the room. Colours were chosen to not look too much like commonly dropped food (*ketchup-red, sauce-brown, sausage-beige, cucumber-green*), as the piazza is expected to be used for meals. The main entrance is paved with an irregular mosaic stone pattern (D). This could be painted by the children to mimic the mosaic artworks commonly found throughout Tynnered. Or it could be left blank, as a metaphor for the similarities and differences between everyone and everything.



Figure 45. Material for internal walls, a pine acoustic wall (A) covers one wall in the piazza, otherwise plywood sheets (B) and plaster (C) cover most walls. Walls made by CLT (D) have their outer lamellae visible, which looks more like the other plywood walls (B), but can remind and awaken curiosity of the material structure (D). The colours are limited, leaving space for displays of current projects and the children's own art.



Figure 46. Other materials, standard acoustic square ceiling tiles (A) in every room, with the ability to fasten hooks and hang things from the ceiling in between the squares. A lot of the furniture is made from birch laminate (B), making it a common material the children meet. Tiles (C) are used as a backsplash in the student kitchen and department ateliers with mini kitchens. Textiles, such as carpets (D) are not installed as a permanent architectural component. This is to facilitate cleaning (*when - not if - a child throws up on the carpet it is good to be able to move it immediately, rather than to try to dry it up while making sure no one walks around in it*) and to allow the inhabitants of the space to construct their own rooms, to decide for themselves where a soft carpet should be placed. Textiles are an important sensory experience and can add softness and colour to a room without dominating it.

Sections



Figure 47. Section A-A (orange), scale 1:250

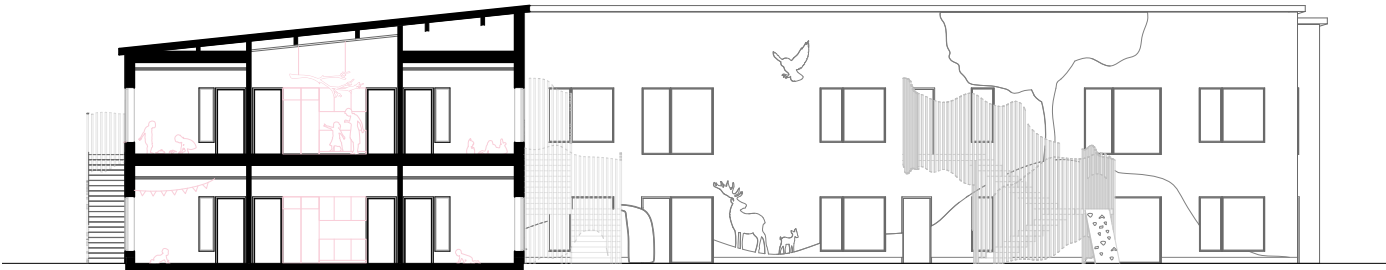


Figure 48. Section B-B (pink), scale 1:250

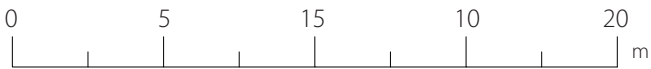


Figure 49. Section lines in plan, 1:1000

Furniture

The materiality and furnishings cling together with the rest of the architecture in preschools. Especially for children, who are smaller and allowed less control of their space, furniture shapes rooms. In a room where adults see a table, the scale and imagination of a child allows them to see another room. When creating the mini architecture, the spaces for solitude or pretend play, the furniture is important. Its move-ability matters, in order to give the children and pedagogues control of the environment, to create and change space both short term for different activities, but also over the course of the year with projects and group changes. Rooms need to be general and generous enough to offer different furnishing possibilities, which work well in educational and play settings. Window and door placements cannot be too limiting. Furniture that needs to be attached to the wall, such as shelves, need to be able to stay there and work with different furnishing possibilities. Doors need to be wide enough to move furniture through, and certain furniture need to have wheels, be light enough, or divided into several pieces for move-ability. The environment has to be able to interact with the people in it. While a wall and a shelf both can divide a room, they create different spaces. Dorte Mandrup uses shelves to create rooms in Råå förskola, keeping connections between rooms while still dividing the space. It opens up and divides simultaneously. The permanent instances with walls, doors, and windows cannot be moved, but the walls can display artwork and allow play, doors can be opened or shut, windows can be covered or decorated, things can be hung from the ceiling, and the floors can be a place to rest or play. For children and the Reggio Emilia philosophy, I argue that the furniture is a vital part of the environment, less permanent than the architectural components.

The municipality of Gothenburg has three manufacturers to order preschool furniture from (Göteborg Stad, 2020). During the work with Hoppet preschools, both the one by LINK and the one by KAKA, both construction materials and furniture have been collected and reused in various ways. It is still in the beginning stages, however. Due to the high standards and regulations within preschools regarding toxins, acoustics, and fireproofing, not all materials are allowed. This, in combination with the economical aspect, can be a reason for mainly using furniture and materials from these manufacturers.

In Reggio Emilia preschools, especially during its beginning years, they took what they had. A window from a demolished building, mismatching chairs, trash turned into treasure in the ateliers. This is still visible in Reggio preschools today, while furniture may be standardised, materials to create from is often what we would consider trash. Recycled cardboard, lids from plastic bottles, and newspaper shreds share space in the ateliers with new wax crayons, glitter, and bright sticker sheets. It is about using what you have, seeing potential in everything, but also accessing available tools within society. Not limiting the child to recycled materials, but giving them choices and expanding their horizons. This exemplification of play and art materials can be translated into the scale of furniture and construction materials as well. Architect Tullio Zini, who worked closely with Loris Malaguzzi and Vea Vecchi with Scoula Diana, also created furniture. His interior designs for preschools are colourful and have strong shapes. It does not look like everything else, it is unique and playful and childish. Embracing how children have a right to both natural wooden materials and to plastic colourful objects. They have a right to objects that evoke emotions.

In regards to this, furniture displayed in the project are a mix of my own design, general furniture from other designers, and those from the standardised manufacturers. Iterations have been made with material from only these manufacturers, proving that the qualities of the architectural space can be achieved even with these furnishings. But, leaning into Reggio Emilia pedagogics, children should not be limited to these materials, and therefore this project is not either. Materials are chosen with trust that they will be respected and maintained. Handing a child a real glass jar tells them that they are trusted with this object. They are trusted to maintain it, and if it breaks, they learn something about the world. Same with the plywood walls. If someone decides to draw on them, they will not be the same. You cannot roll over another layer of paint, cover it up and it will look like before. It leaves a mark. Your presence, your decisions, have an impact. Actions have consequences.

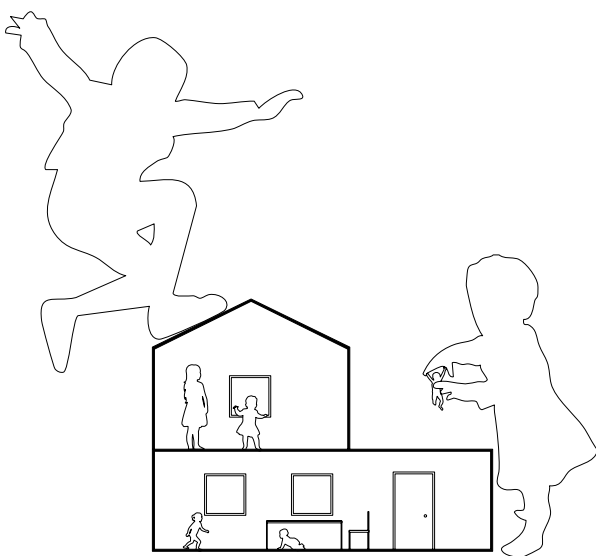


Figure 50. Drawing from design workshop A, working with the scale of architecture in relation to children. Largest children are scale 1:20 and interact with the building as a toy, while the slightly smaller children in scale 1:100 and they are inside the building as if it is a play house. The smallest children in scale 1:200 relate to the building as if it is a regular room.

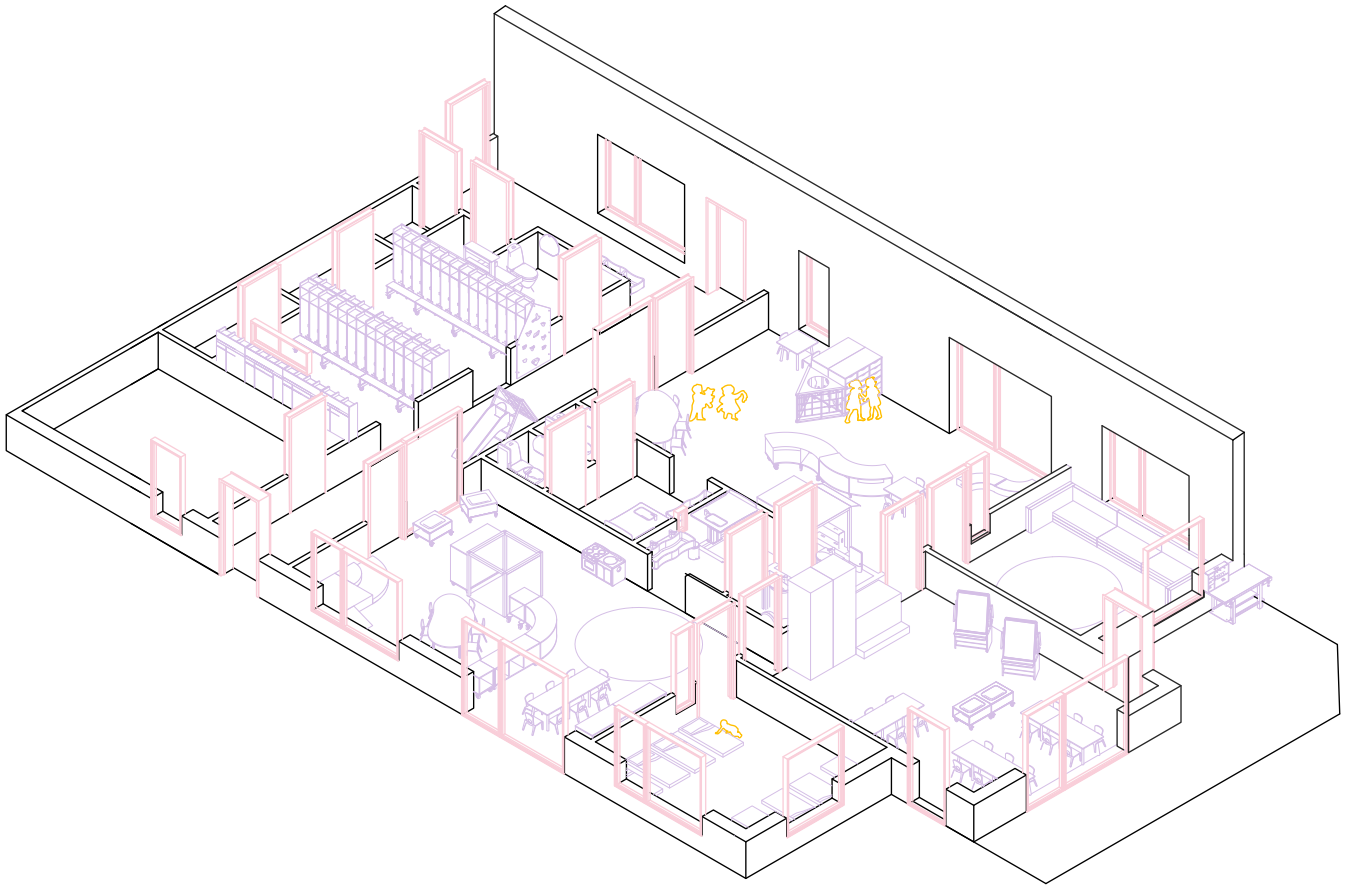


Figure 51. Furnishing proposal for two departments, *Kotten* and *Knoppen*.

Construction

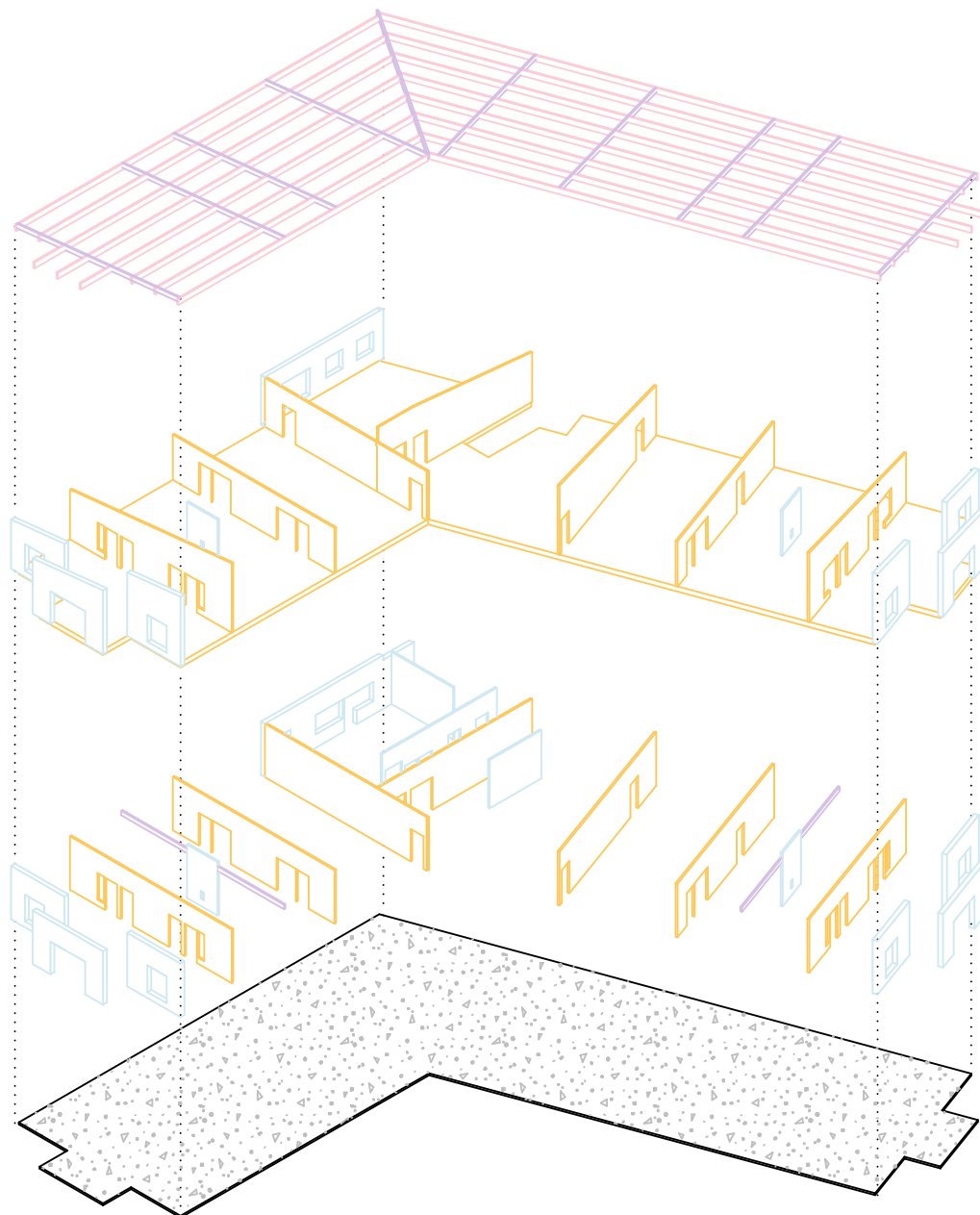


Figure 52. Exploded axo of construction principle .

- Roof truss
- CLT beams
- CLT element, load carrying and stabilizing
- Load carrying or stabilizing wall frame with studs
- Concrete bottom slab

All other walls, including the facade, are stud walls with either a plywood or plaster internal covering.

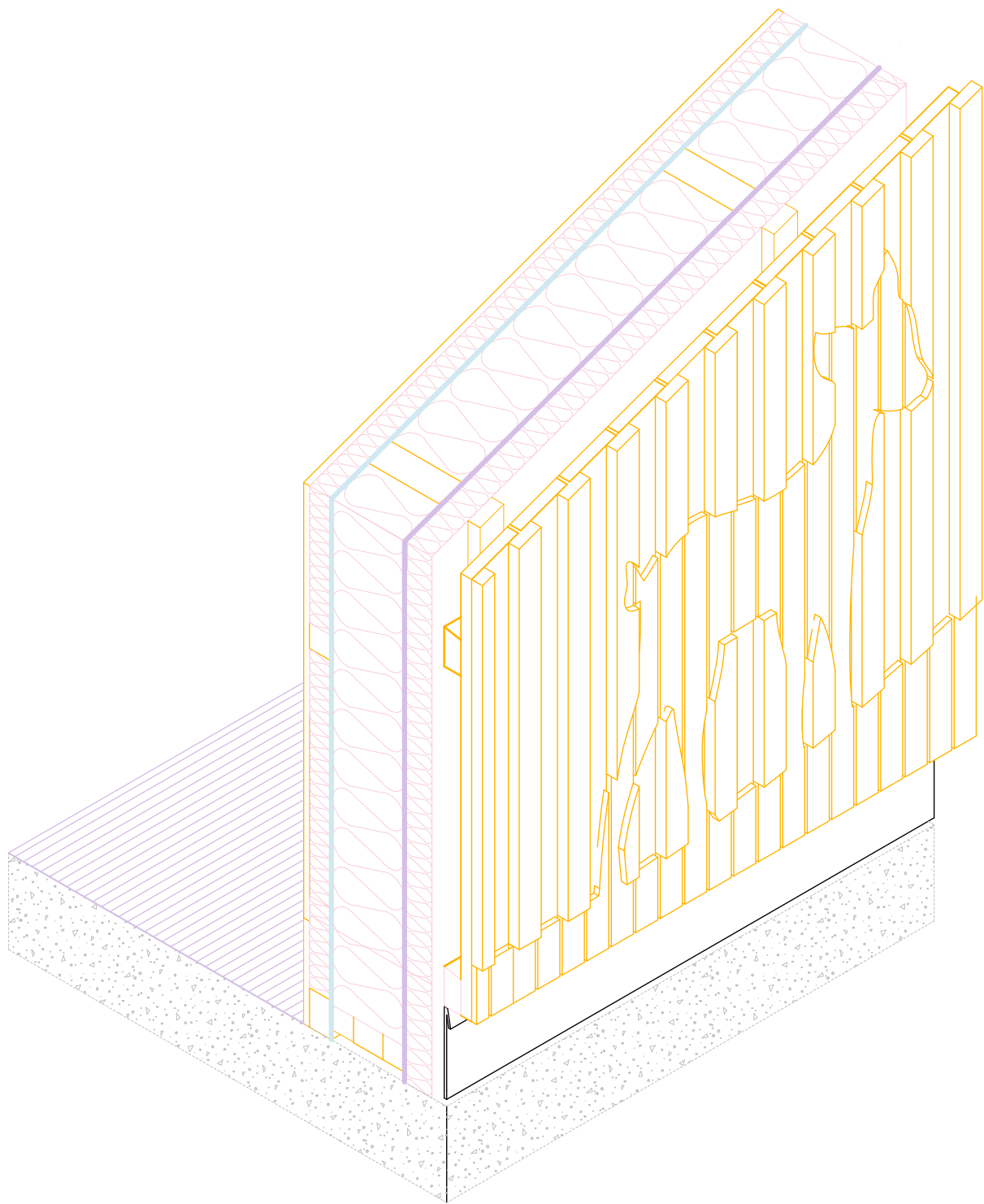


Figure 53. Exploded axo of construction principle over exterior wall detail pattern.

- Mineral Wool
- Wind protection
- Wood
- Vapour barrier
- Linoleum floor covering
- Metal sheet
- Concrete bottom slab

Detail section and elevation

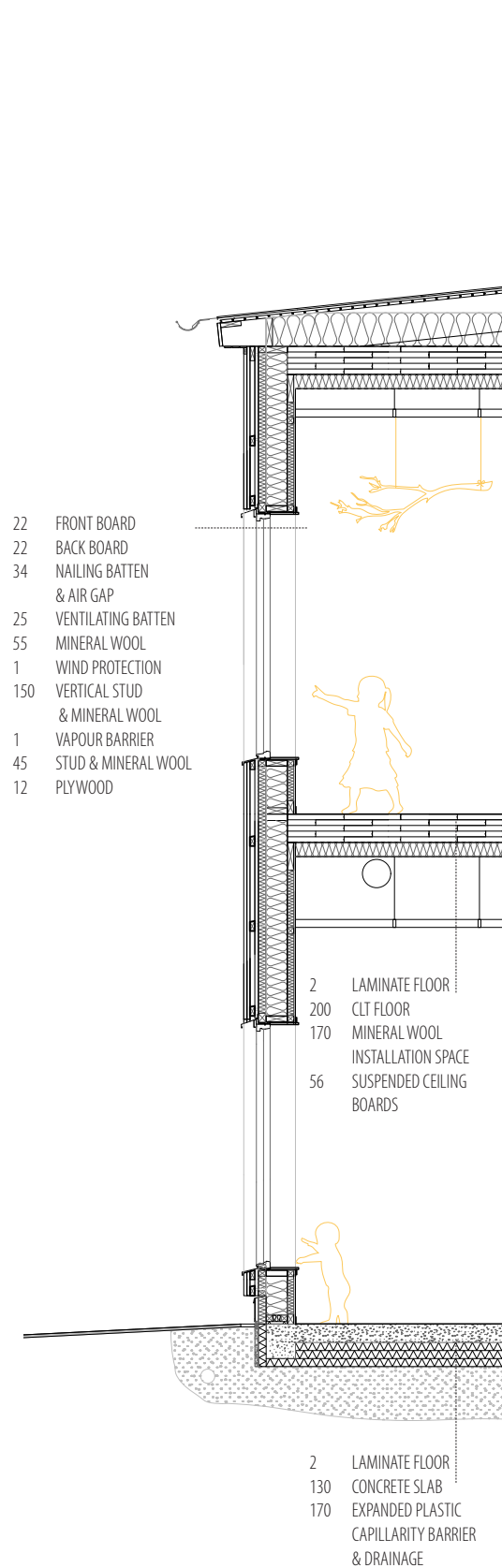


Figure 54. Detail section and elevation in scale 1:50

Detail drawings

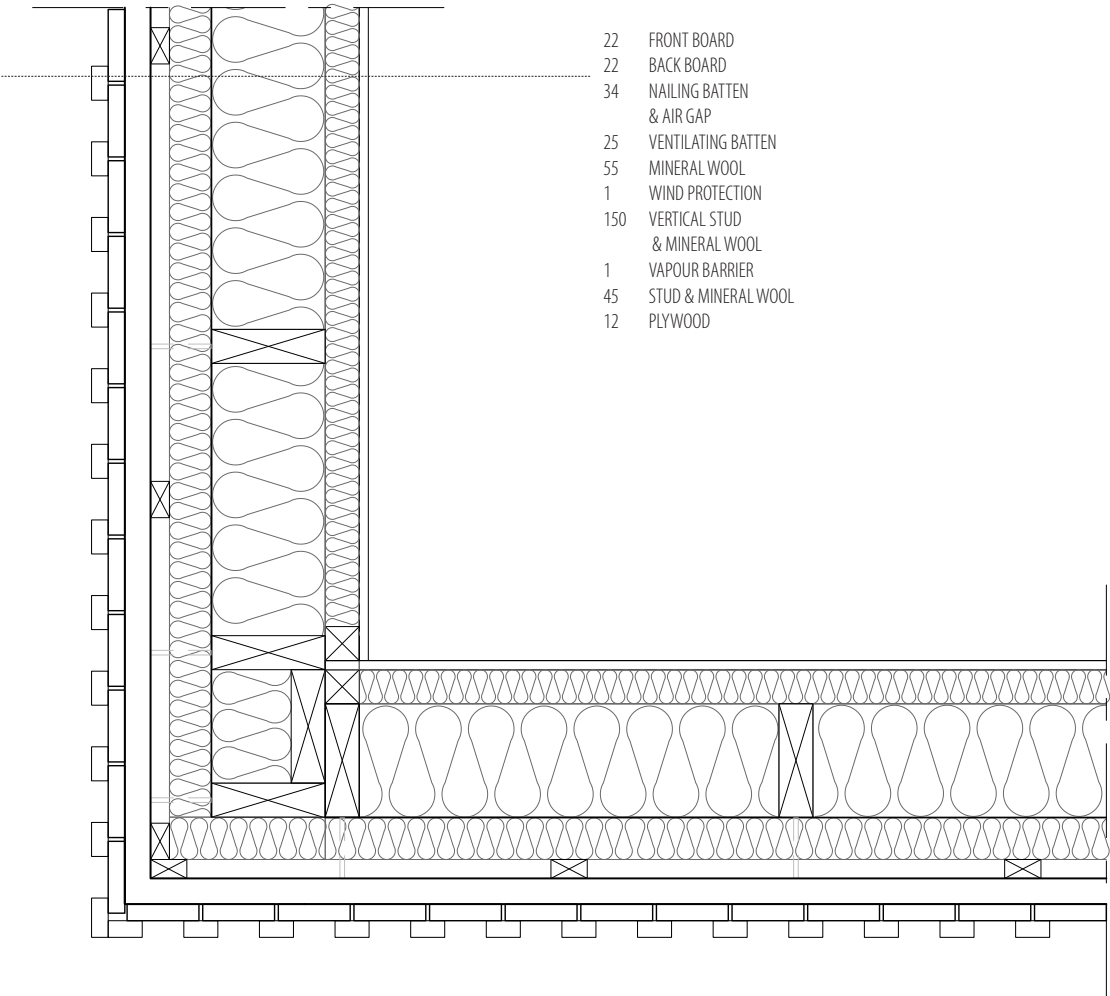


Figure 55. Horizontal detail over corner connection, scale 1:10.

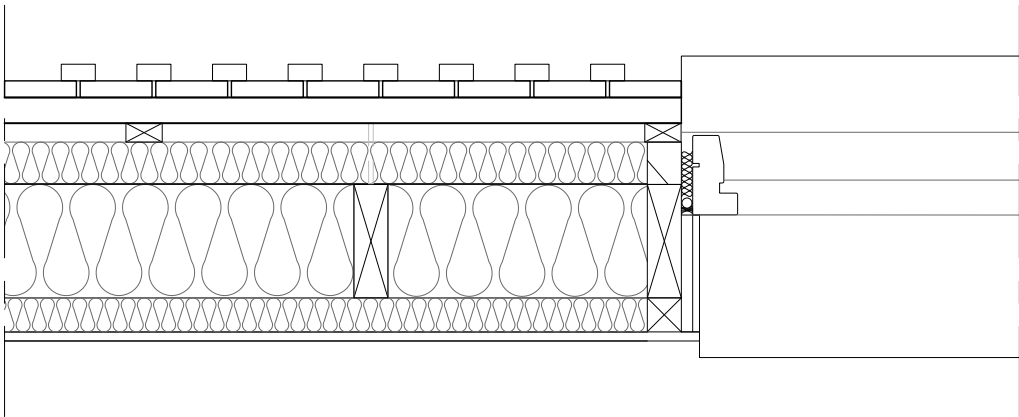
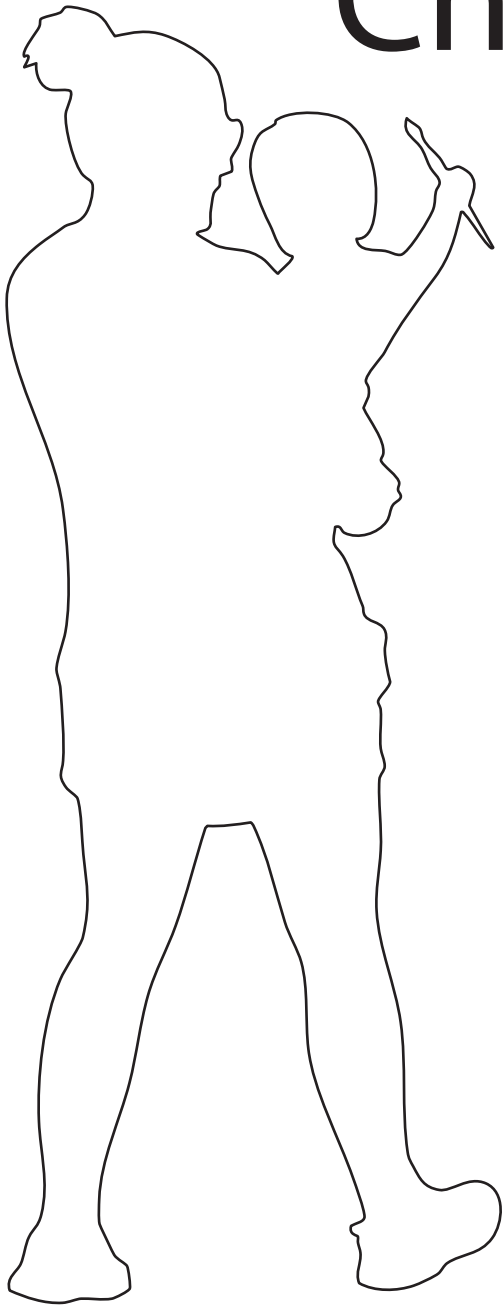
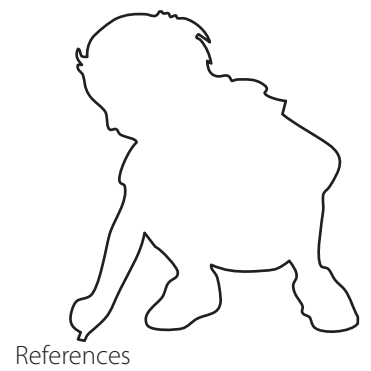
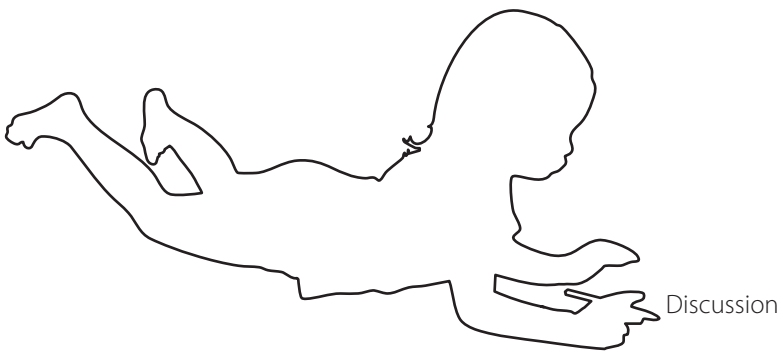


Figure 56. Horizontal detail over window connection, scale 1:10.

Chapter 4

Conclusion





Discussion

Through this project I have explored how the Reggio Emilia pedagogical and philosophical approach can impact and take expression in the architecture of a preschool, while also adapting it to the context of Gothenburg today. The initial statement being that *general* and *temporary* architecture such as the barracks standing at the lot today, are not as beneficial as *purposeful* and *permanent*.

There have been two major obstacles throughout the process, the first one being the combination of the Reggio Emilia philosophy and the current standards surrounding preschool architecture in Gothenburg today. There are substantial differences, and in order to create a realistic project I had to carefully pick and choose from each moral handbook and combine it to something feasible. In the end, the main goal is the same: to foster children into strong members of society. There are instances of collective cognitive dissonance, where design choices do not match the nurturing ideas, such as handing a child a plastic cup while claiming to trust their ability to maintain and care for a fragile material. I have done my best to not end up doing the same mistakes, to in every design choice be true to the capabilities and rights of children.

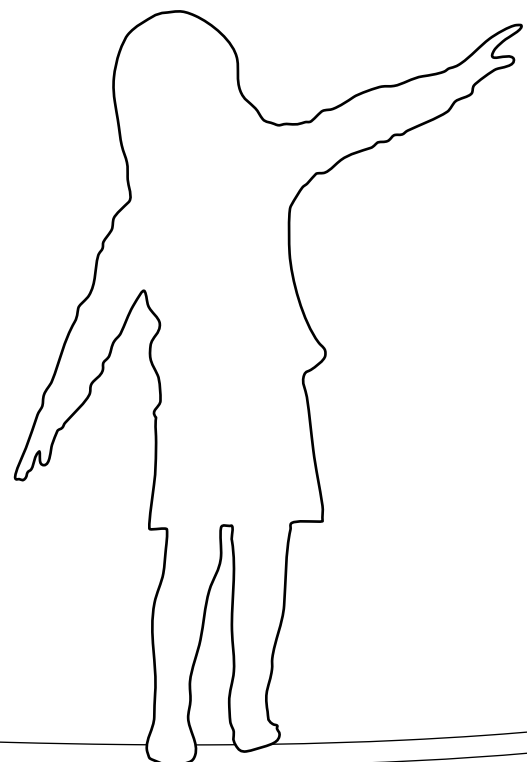
Throughout the process, I have returned to Jess Lair's quote - "*Children are not things to be molded, but are people to be unfolded*" - and asked myself: am I molding or unfolding? What is this design attempting to do? Narrow and restraining architecture molds and creates difficulties for the inhabitants of the space to affect it. However, the original statement remains: purposeful and permanent architecture has value that general and temporary simply does not. The architecture should allow for temporary provocations, furnishings, and projects, but the architecture itself should not be general nor temporary. Sometimes, I have felt too careful, afraid of what the moral consequence of each design choice would be. Eventually, I had to let that go, and create what I have felt is guiding, without being restraining, and permanent while still allowing for temporary alterations. It has been a balancing act.

My belief is that the final design supports a Reggio Emilia way of learning. Artistic and creative expressions are prioritised by creating distinctive spaces for these activities. Each department pair gets a mini atelier, in addition to the two common ateliers by the piazzas. These spaces are meant to be filled to the brim with materials, without necessarily disturbing the rest of the play, rest, and education happening simultaneously. The ongoing projects are supported by the generous spaces. The piazza can be used for dining, but there is also enough space for eating inside the departments, if an ongoing project is taking up the piazza. Windows work as a connection between spaces as well as an exhibition space, allowing the children

and pedagogues to document and display their work. Each space attempts to provide socialization as well as the ability to get a moment to oneself. This can be exemplified by the central, social piazza, and the niche under the stairs. Or the large, open department home rooms, and the deep window sill, providing a space to sit in. Children are encouraged in their independence by attempting to create rooms that are accessible, approachable, and safe for them. Again, this is a balancing act, where one cannot over-protect and discourage children's own exploration with risk. The preschool is a democratic space, where all departments are similar with certain individual qualities. They can be divided into four separate entrances, in addition to the central entrance, providing long term flexibility for co-use of space with the nearby schools.

In the end, I believe that this preschool successfully combined Reggio Emilia pedagogics and the current Swedish preschool architecture. Is it a Reggio Emilia preschool? Well, no. And yes. One cannot take the geographical context out of the approach, similarly to how the cheese from the same area, Parmigiano Reggiano, is only just that if it is made in its origin city. One can take the same ingredients, but place them in another context, and get something that is similar enough, but not the same as the original. It is a Tynnered preschool, greatly inspired by the Reggio Emilia approach and its values. The project embraces its local qualities and roots itself in its place, aiming to better the world by starting with the local children. And that, to me, is what Reggio Emilia is all about.

To conclude, the project did what it aimed to do: implement Reggio Emilia approaches in the design of a preschool in today's Gothenburg.



Author's note

This project would not have ended up where it did without my community and the help of others. Learning really does happen in socialization, as Loris Malaguzzi claimed. Thank you to my family, my partner and daughter, for being there and coming with excellent and eccentric thoughts. Thank you to all the friends and colleagues who continuously followed the project and encouraged me. I would also like to thank supervisor Catharina Dahl Palmér for the amazing discussions and support during our tutoring sessions, and examiner Björn Gross.

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Finally, thank you who have taken the time to read this.

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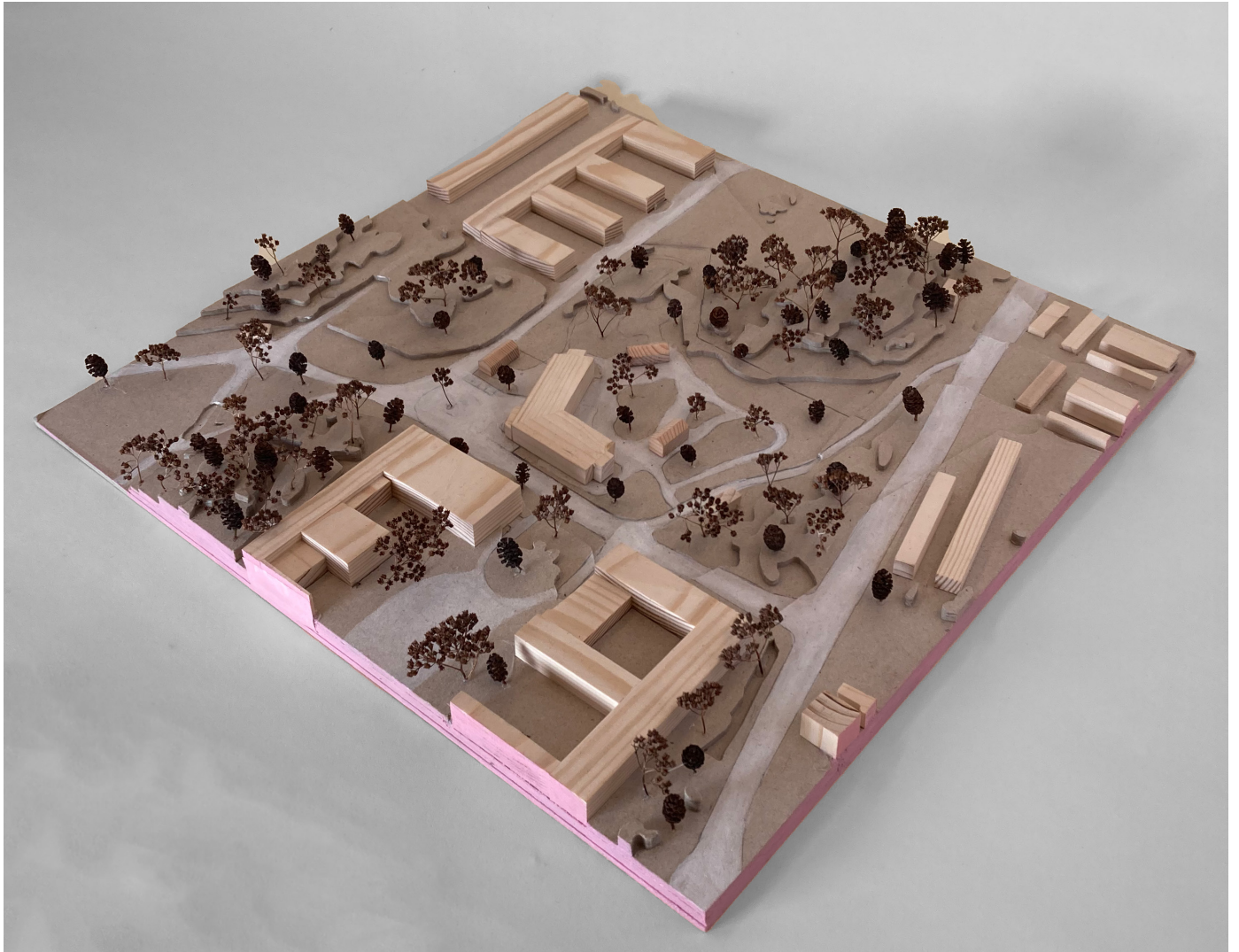
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Exhibition photographs



The exhibition



Site model



Photograph of building model, south and eastern facades



Details from building model



Northern facade



Detail model of facade cutout

