

LEARNING STREET

a community school in Kålltorp

*Master Thesis
Architecture and Urban Design
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ABSTRACT

Recent statistics show that we are spending more and more time with learning. Since the dawn of the digital revolution we progressed from an industrial to a knowledge society putting learning in the midst of our all interest. But the mere consumption of information is not enough. Everyone is urged to process it further, to subsequently produce even more knowledge. In this mindset, schools are not only learning machines, feeding its visitors with information but are living places to bring people together and let them benefit from each other's ken.

The project's point of departure lies within the urban fabric of Gothenburg. The idea was to offer a public meeting place in the form of a community school within a district where the urban potential has not been fully tapped yet. The chosen plot in Källtorp on the verge of the local recreation area Delsjön offered us with a challenging yet interesting topography: a wide and flat field besides a densely wooded and steep hill. The combination of both, the shift of topography and vegetation of the plot with our lively imagination of a school led to keywords such as 'journey', 'long and winding road', 'community and privacy' and 'exposure and security'. These thoughts materialized in a way so that circulating through our building is experienced like walking through a sloping street: a space is revealed while passing a crossing, shifting in- and outsights while moving up the hill, meeting places when paths intersect, a feeling of privacy through niches in space, a sensation of community through transparency.

The outcome was a site specific school where rooms and people are not separated through hard cuts but the meandering fluidity of space. This paradigm also influences the outside. The buildings' embracing gesture emphasizes the equal importance of the exterior. It tries to merge with the surrounding reaching out for the public to welcome it. In return it rewards its visitors with a rich public meeting place.



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SGS student accomodation 'Ostkupan'



SGS student accomodation 'Högsbogatan'

1. *THE INITIAL IDEA*

The starting point of this project does not at all coincide with the actual beginning of its conscious thinking process.

Interestingly, it is this very intriguing instant, often in situations where you least expect it that can influence you in a way a deliberate try to think could have never brought you.

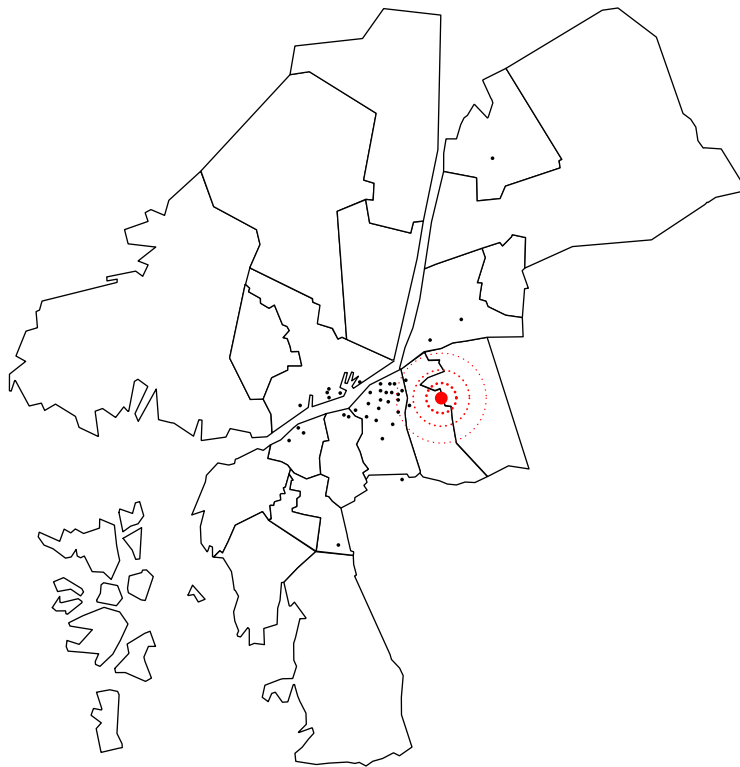
A dichotomy between noticing but not really understanding or feeling but not being able to articulate has always been one of the most interesting difficulties for me.

So what was it that brought us to this topic?

It began in the second half of 2013 when both, Yuni and me came to a new city, having an idea but not really knowing what was going to expect us in the second largest city in Sweden. Since I wrote my school leaving exam about Sweden as a welfare state I was ever since intrigued about this seemingly most awesome place in the world. Such a megalomaniac impression naturally entails a high degree of scepticism, making one more than open for any kind of opposing impression.

Either of us ended up in a student complex in two suburban areas in Gothenburg. As you can imagine, them being student accommodations already involves a certain degree of community, either because you have to use the same kitchen or the same laundry rooms. And then came this moment when you wanted to meet for a drink in some nice coffeeshop. 'So... where should we go? - Hm... there isn't really anything here... so let's just go to the center!'

This was this exact moment when I noticed but did not understand, felt but could not articulate a feeling: There was simply no meeting place in my neighborhood!



The site within Gothenburg

2. *A MEETING PLACE*

Our idea was born!

We wanted to create a meeting place in a suburban area in Gothenburg where the urban potential has not been fully tapped yet.

Often enough architects have the most interestingly sounding ideas but in the end it is not accepted by the public. This is amongst others due to the building not being designed to fit a real need. That is why we did not opt for inventing a new typology of meeting place but rather implement it into an environment which is already a fixed part of everyday's life: a high school. Since we did not want to provide this place only for its main users, meaning students and teachers we adapted our concept and shifted to a community school: a hybrid between school and public building.

In the end we found our site in the eastern part of Gothenburg, an area called Kålltorp. The chosen plot on the verge of the local recreation area Delsjön offered us with a challenging yet interesting topography: a wide and flat field besides a densely wooded and steep hill.





Böskolans Friskola



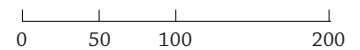
Katolska Skolan av Notre Dame



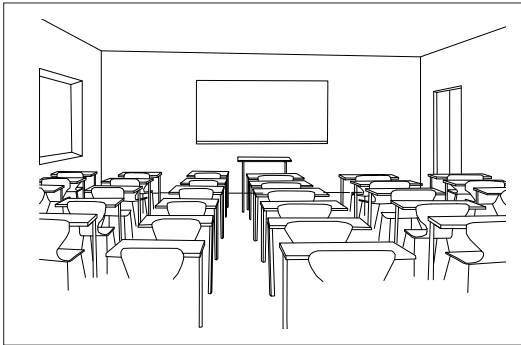
Nya Lundenskolan



Kärralundskolan



theory



generic classroom



generic corridor

archetypal school

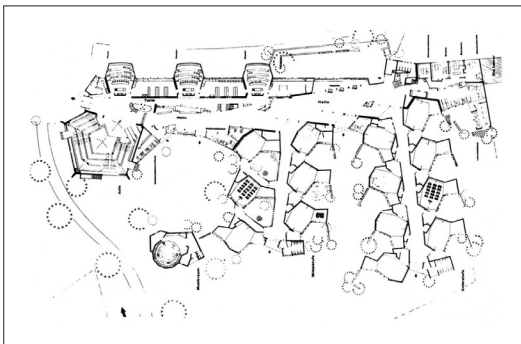


Die Dorfschule, Albert Anker (1848)



Collège des Tuillières, G. & P. Mann (CH, 2005)

'box-type classroom'



Geschwister-Scholl School, Hans Scharoun (GER, 1962)



Protest. Comprehensive School, plus+bauplanung (GER, 2004)

learning landscape

3. *PEDAGOGIC THOUGHTS*

The archetypical school is characterised through an array of classrooms, isolated volumes inside of a bigger shell. This spatial configuration does not only limit their flexibility when it comes to changing learning situations it also restricts its users heavily regarding social interactions through acting as a barrier in space. The connection between classrooms - often referred to as 'corridor' - is in many cases not designed in a specific way but a mere circulation area with no usage qualities whatsoever.

Even though it is not a new topic, schools need to adapt their framework and foundation constantly. This is amongst other things due to today's increasing cultural diversity, an outcome of globalization. The higher the degree of inequality (e.g. language, religion and rootedness), the more difficult it is to meet everyone's needs. Nevertheless a more diverse learning environment tailored to the different student's abilities is indispensable.

During our research we found amongst others two main tracks of how schools are architecturally articulated nowadays. One of them is derived from the aforementioned generic classroom: the box-type. The other one ties in with a more open and fluid approach: the learning landscape.

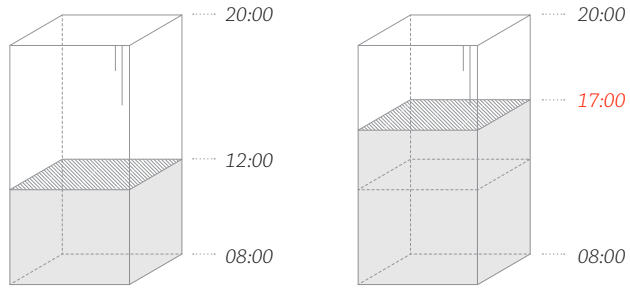
As you can see on the pictures on the left the 'box-type' classroom still has not disappeared from contemporary school projects.

At the same time learning landscapes are nothing new. Already in the sixties Hans Scharoun integrated this spatial theme into his project called Geschwister-Scholl School.

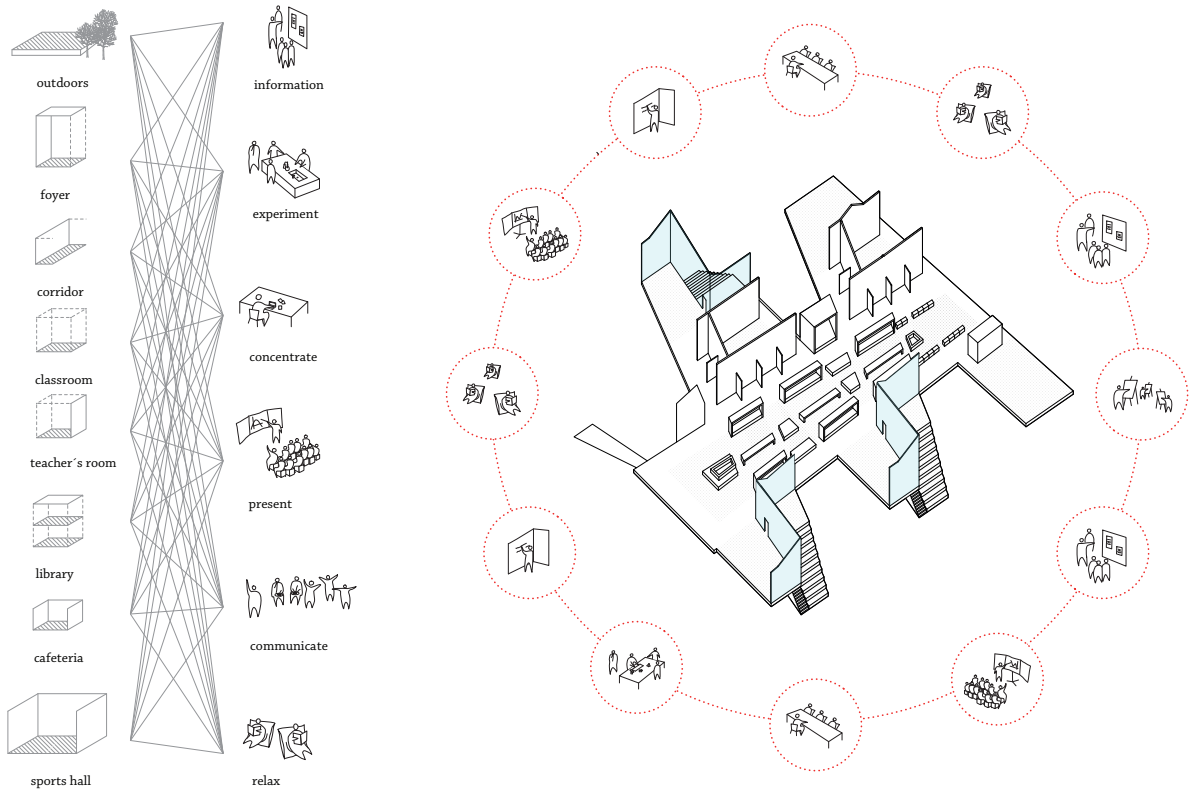
changing demands

12 years ago

now !



time spent in school: changed schedules



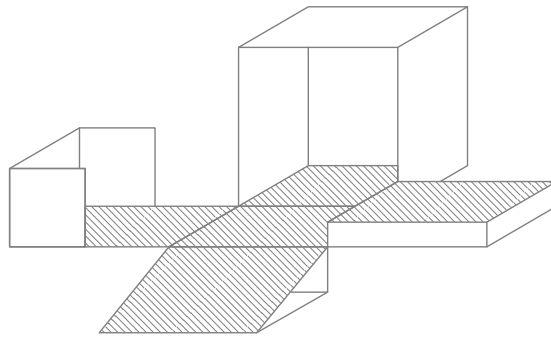
everything everywhere!

Recent statistics show that we are spending more and more time at school and more and more time with learning in general. Since the dawn of the digital revolution we progressed from an industrial to a knowledge society putting over and over occurring knowledge acquisition in the midst of our all interest. But the mere consumption of information is not enough. Everyone is urged to process it further, compare and combine it with other sources of interest to subsequently produce richer knowledge. In this environment, schools are not only learning machines, feeding its visitors with information but are living places to bring people together and let them benefit from each other's ken.

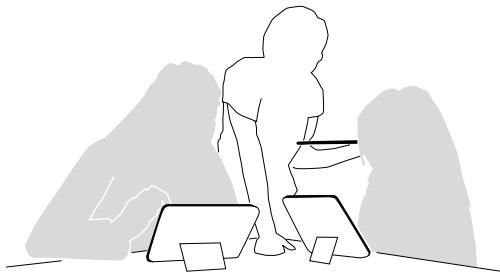
But what is a living space?

We believe that it is a flexible and dynamic environment that can facilitate different kinds of situations. In our opinion a school's internal organization can be understood as a sequence of happenings instead of monofunctional rooms. This leads to one of our core concepts: everything can happen everywhere. Be it a reading festival in the sports hall, a public lecture in the library, an exhibition in the entrance foyer, a painting class in the corridor or a spontaneous music performance in the café.

pedagogic cornerstones



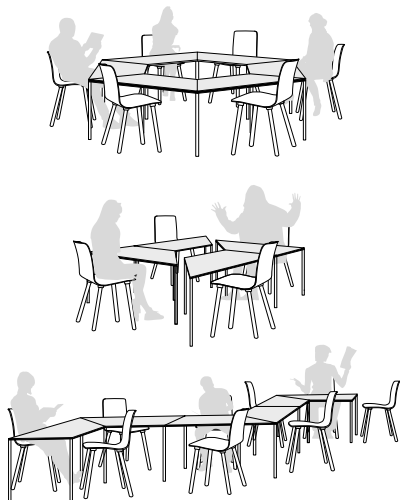
classrooms have to be unfolded!



instructed learning



peer evaluation



place making through flexible furniture



art classes as emotional field tests

The classroom has to be unfolded!

In ultimate consequence we came to the conclusion that a box-type classroom can never serve our demands on a school as we imagine it. This model is simply incapable of providing space for the wide range of learning situations required by a flexible environment that is driven by spontaneous and ever changing situations. Therefore Classrooms need to be unfolded and the resulting rooms have to be designed in a way that bears much more spatial potential.

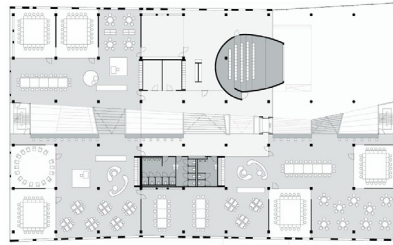
The functioning of this spatial configuration is supported by a number of pedagogical thoughts. Before going into detail I would like to include a comment regarding this issue by the Dutch architect Herman Hertzberger who is mostly known for his numerous school designs:

Architects should not get involved in debates about education; instead, they should create spatial conditions that will benefit learning in a general sense. The building should provide a general framework for education and learning, while being flexible enough to respond to changing demands [...] ¹

Nevertheless we believe it is essential to have a general understanding about prevailing pedagogic trends. We included the following concepts into our project: instructed learning, peer evaluation, flexible furniture and the implementation of different kinds of art as an integral part of the school's time table. Instructed learning leads to students spending less time in classrooms and more with self-study. Peer evaluation emphasizes the importance of collaboration and involvement. Flexible furniture facilitates changing spatial configurations and collaborative art classes act as emotional field tests.

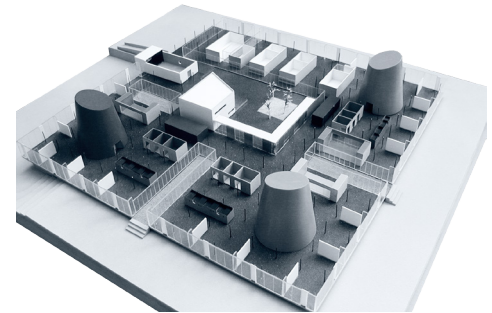
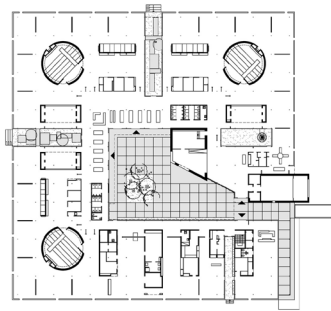
¹ Hertzberger, 2009, p. 9

precedent studies



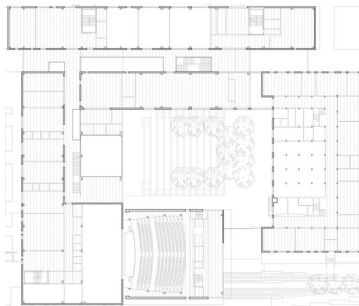
Corlaer College, broekbakema (NL, 2006)

interconnectedness



Råholt School, Kristin Jarmund (NO, 2004)

low degree of pre-defined space



Booker T. Washington High School, allied works (US, 2008)

*integration of art
activation of circulation area*

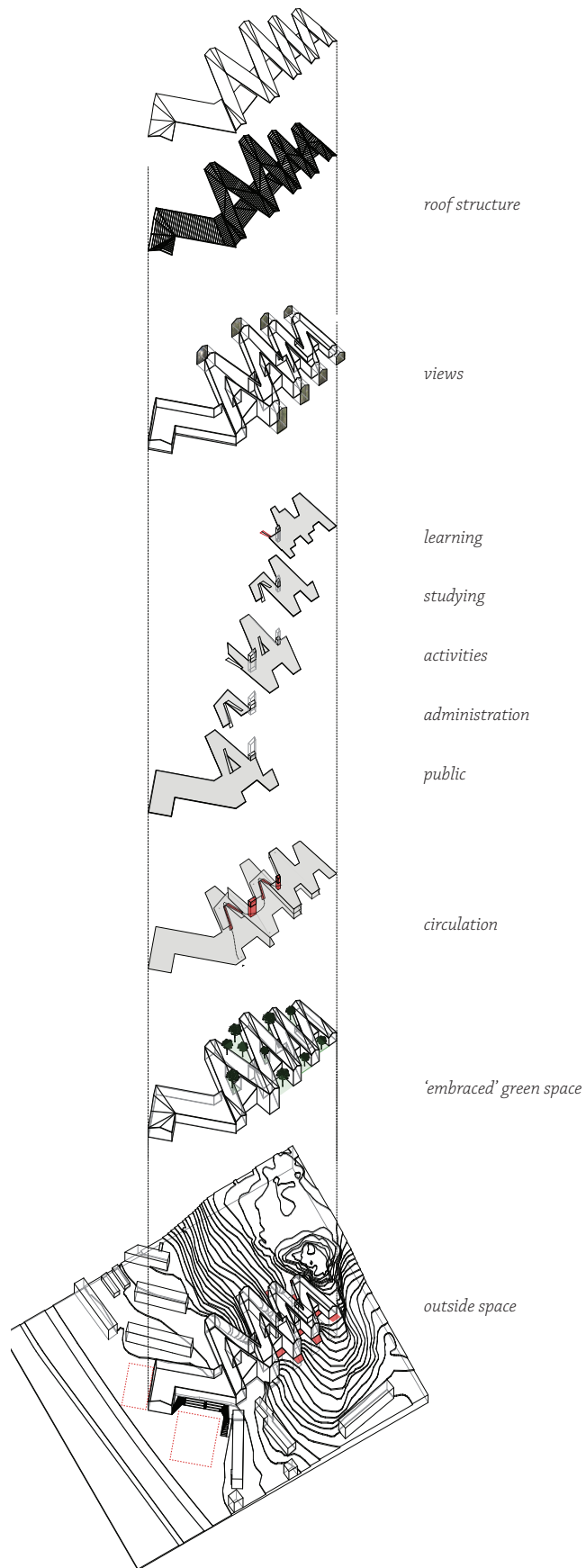
A number of precedent projects influenced us quite fundamentally.

What they have in common is that seen from the outside they seem to be relatively untouched by their surroundings. Supposedly best described by the term 'monolith' they probably can be positioned almost anywhere. Still, their compact shape did not lead them at all to the same internal principle.

The first project, the Corlaer College by Broekbakema located in Nijkerk in the Netherlands incorporates a zoned approach regarding its internal organisation. The building is structured through similar zones, each of them consisting of closed classrooms, open learning spaces, quiet areas and a teacher room. The theme that inspired us the most was the split level arrangement. In this sense the main staircases do not act as mere circulation area but rather as a spatial element that has a wide variety of usage values.

The second project, the Råholt School in Eidsvoll, Norway is characterised through its general openness. It only incorporates three 'proper' classrooms and a special zone for science subjects. It was exactly this low degree of predefined space that both surprised and impressed us the most.

The third project, the Booker T. Washington High School in Dallas in the United States, centers on its art theme. It does not only invite its main users, students and teachers to come together and collaborate on a creative base but also allows for the public to get an insight into their process. The whole building seems to be filled with this creative energy and it even reaches out into the corridor spaces.



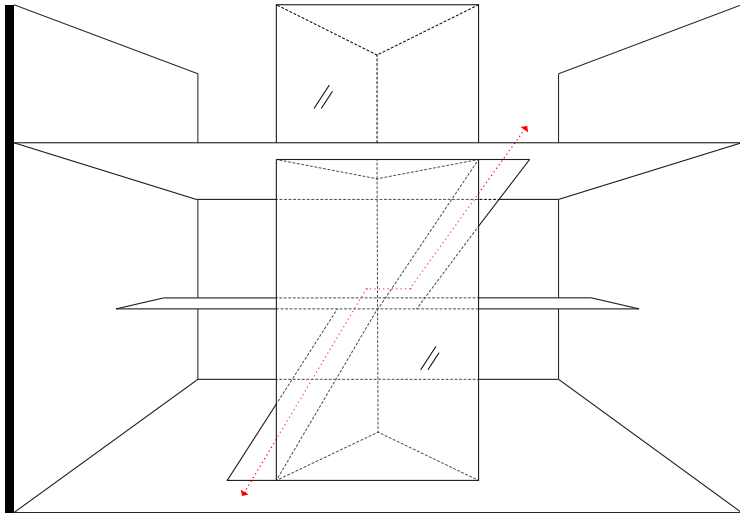
4. *ARCHITECTURAL MATERIALIZATION*

In a further step these pedagogic findings had to take form or be supported by architectural means.

To sum up, we wanted to aim for an open atmosphere where instead of fixed spatial configurations places can be invented, every day in a new way. Important connections are created when paths intersect.

These thoughts materialized in a way so that circulating through our building is experienced like walking through a sloping street: a space is revealed while passing a crossing, shifting in- and outsights when you move up the hill, meeting places when paths intersect, a feeling of privacy through niches in space, a sensation of community through a high degree of transparency. The goal was a compact yet spread building where spaces and people are not separated through hard cuts in space but the meandering fluidity of the buildings' circulation. This paradigm does not only have consequences on the inside but also on the transition to the exterior. It embraces the outside and as a result emphasizes the equal importance of this negative space which it relies on.

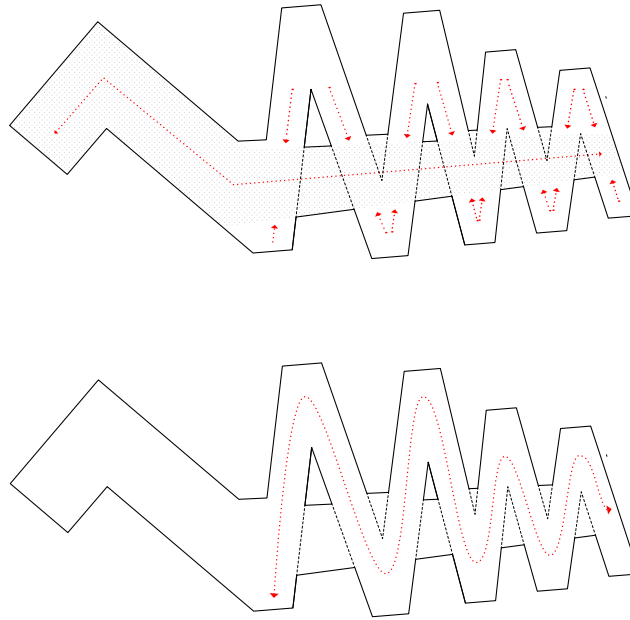




the stair has to be set free!

The stair is no longer locked up in a core but is released and winds around a light courtyard. In this way it acts as a spatial guide, not only leading its users from a start to an end point but also offering a scenic tour through different spaces.

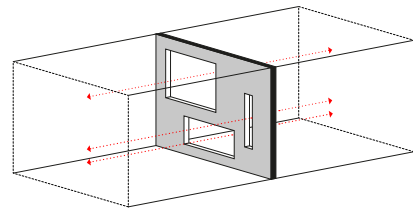
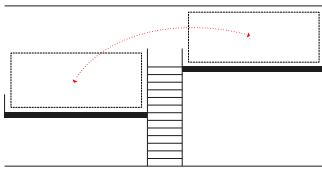
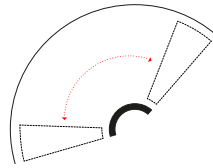
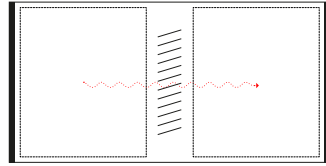
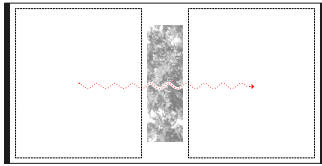




fluidity of space

A 'corridor' should not be an unprogrammed, neutral space but an actual design element. Instead of creating this circulation area as a remaining zone after subtracting all 'main' spaces from a bigger whole it has to become the core of the building. This is because of its fundamental importance as a meeting space which all remaining spaces refer to.

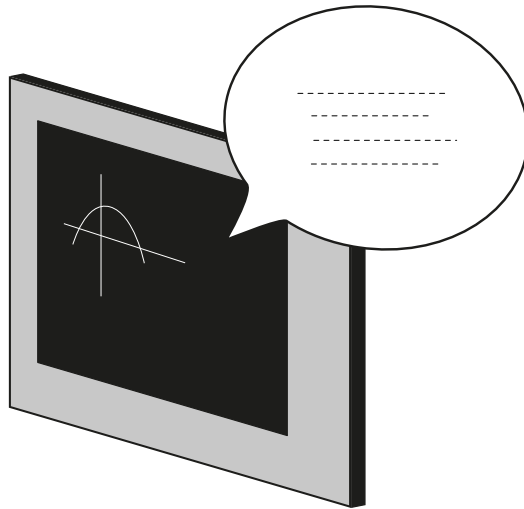




we don't need no walls!

Instead of dividing spaces through walls we wanted to integrate a more gradual approach in order to reach a high degree of interconnectedness. Nature, viewing angle, distance, height and permeability act as buffer zones, blurring the otherwise rather exact borders.



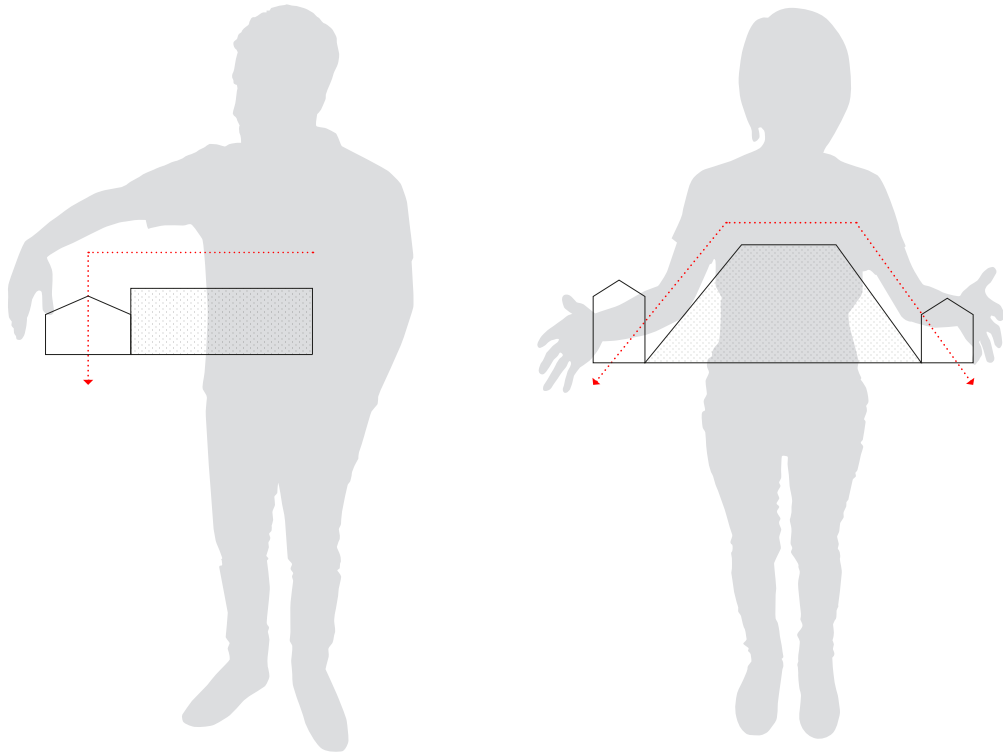


walls have to be activated!

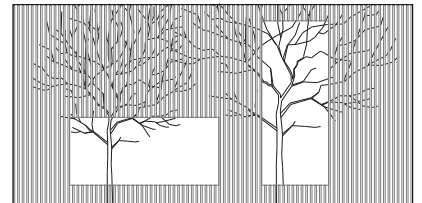
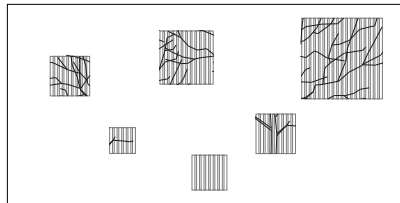
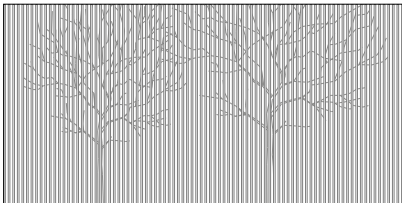
If we need to have walls let's make them usable at least! Unprogrammed walls can be activated through Graffiti or painting classes. - Every week a new design! This does not only contribute to the ever changing atmosphere in the whole building it also gives a feeling of co-determination among students.

Another example is 'colorboard' walls, with niches for single or group investigations.

the shape and its envelope



embracing gesture

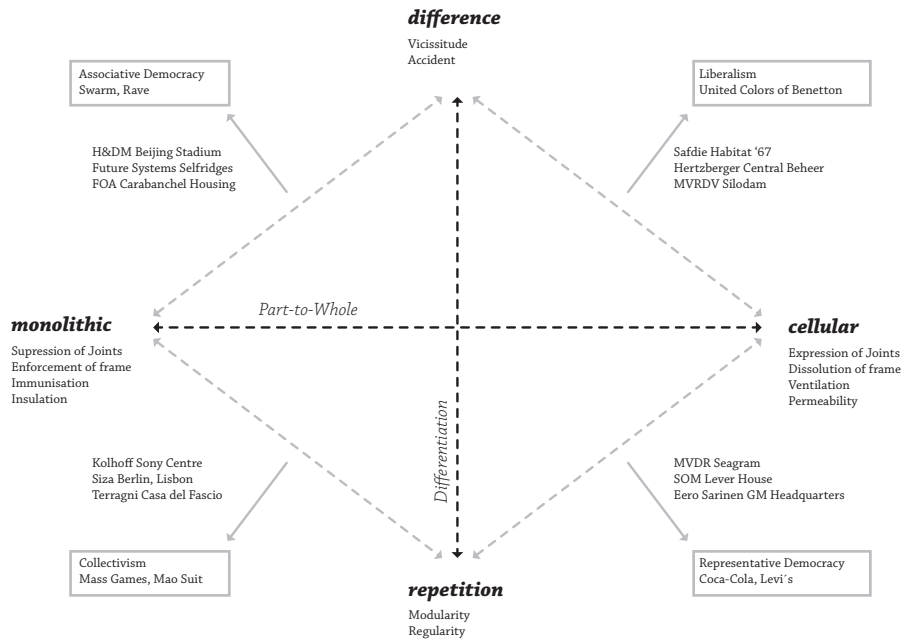


gradients of transparency

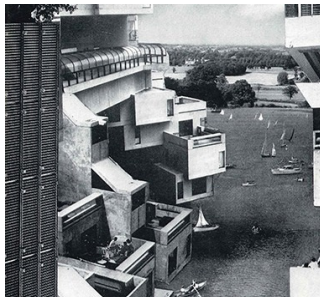
The specific form allows the building also to, as a road sloping up a hill, react to the surroundings, resulting in an 'embracing gesture'. The connection between in- and outside is filtered through different kinds of openings: while the skin is perforated with a pattern of smaller windows, the head's openings are large, allowing a great view into the adjacent forest.

The school is not at all an introvert building but it actually tries to merge with the surroundings reaching out for the public to welcome it. In return it rewards its visitors with a public meeting place for events such as concerts, readings, exhibitions, open air sports events, lectures and the like.

'Pattern, Fabrics, Prototypes, Tessellations'



typical swedish house silhouettes



H. de C. Hastings 'Civilia'



swarm



United Colors of Benetton



Umeå School of Architecture, Henning Larsen (SE, 2010)



Bildungscampus Sonnendviertel, PPAG (AUT, 2014)

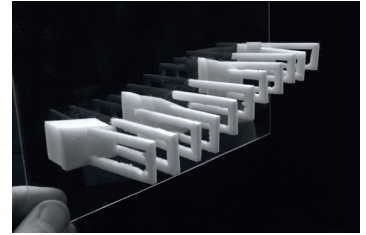
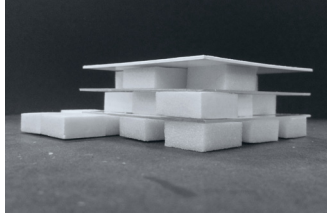
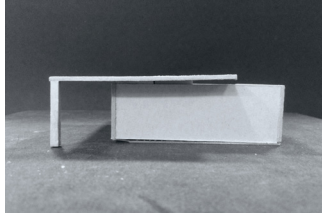
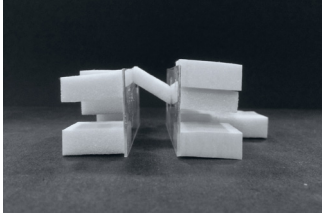
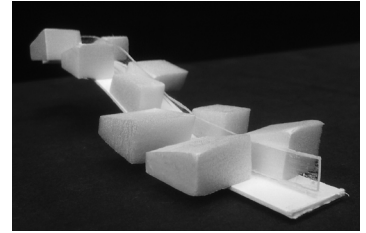
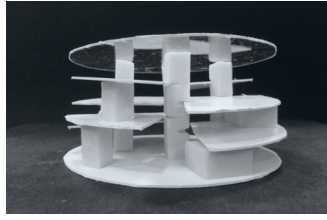
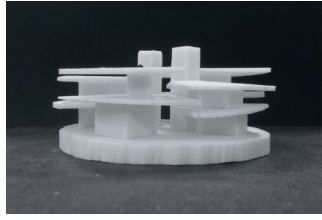
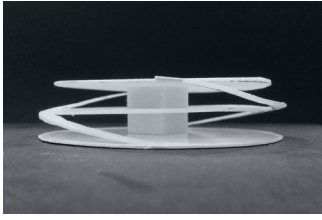
When designing a school an architect needs to be aware of what the building, mostly its outer appearance, symbolizes within society. From the beginning this paradigm was something that we always tried to address, even though we were not completely aware of it. What was clear on the other hand was that it should be a building for people. It was not until our tutor Daniel Norell presented us with an article called 'Pattern, Fabrics, Prototypes, Tessellations' that we started to position our school deliberately.

The diagram on the left presents a couple of associative images and example projects for the different political views. Two of these images caught our attention particularly: the advertisement by United Colors of Benetton and a picture of a swarm. Through further research we stumbled across two other pictures which respond very well to the initial two: the silhouettes of some typical Swedish houses and a picture of H. de C. Hastings' 'Civilia' - his propaganda work for more humane cities.

In the end we tried to find respective examples in the educational sector responding to the two approaches 'Associative Democracy' and 'Liberalism' and found them in Henning Larssen's 'Umeå School of Architecture' and PPAG's 'Bildungscampus' in Vienna. The first is a very compact volume but its envelope being perforated by numerous differently sized windows expresses a feeling of democracy. The latter on the other hand is a cluster-type building where a certain sense of individuality is expressed through the differently articulated parts of the whole.

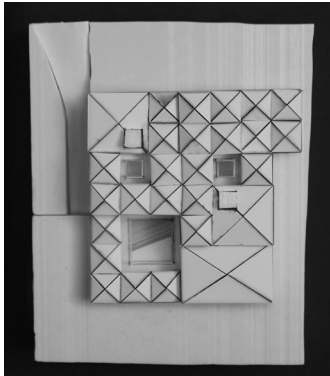
We understand our building as being positioned somewhere in between these two approaches and a phenomenon that it centers on is its relationship of the parts to the whole. As students are all part of a school their entirety creates the whole school. At the same time as one can clearly distinguish the various 'heads' of the volume all of them together create the whole school. In the end our building tries to achieve a certain sense that we thought about long before it was even designed: we are the same but different.

process models

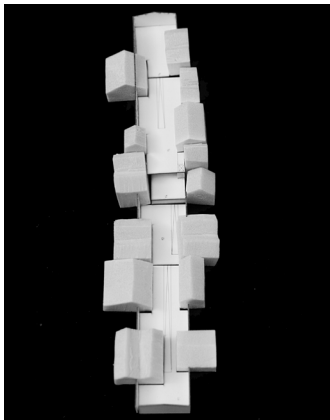


punctual approach

linear approach



'village'



'journey'

5. PROCESS

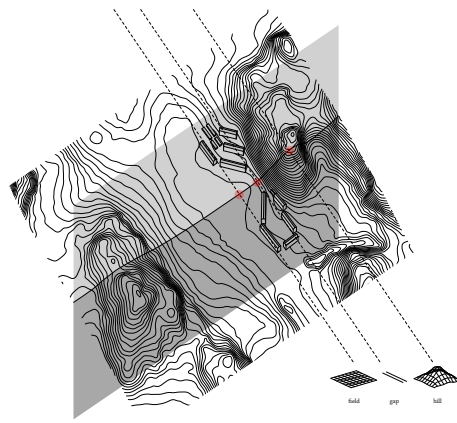
In the very beginning we started off with two different approaches: punctual and linear or 'village' and 'journey' - to give them a certain character. As the term 'village' already implicates we tried to mimic a specific typology: a compact volume is made out of similarly looking parts. We thought of spending a day at school like spending a day in a village. It also offered us with a growth potential since a cluster is not restricted by a finite shape but an overarching logic.

A compact shape seemed to be rather unspecific when it comes to the site. Therefore we decided to develop another approach which was much more based on the specific plot. Small houses are attached to a common path creating a linear shape. Different spaces, heights and views are experienced as you move through the complex. The so called 'journey' responds much more to the site when it comes to connections between the field and the hill.

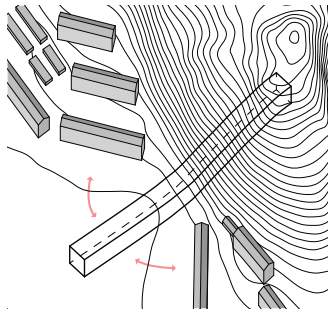
In the end we chose to further develop the linear approach. It simply suited our understanding of a school building better. Moreover we wanted to investigate a rather untypical typology for an otherwise mostly punctual building type.

In the case of more complex buildings such as an extended or community school [...], a socio-cultural complex in which each of the participating entities seeks to express its own identity, there is a danger of fragmentation, which would frustrate the initial hope of cooperation, of working with shared facilities. Only a spatial theme can serve as a binding force [...]

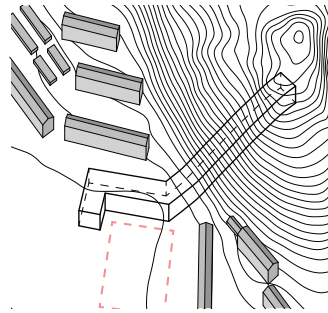
¹ Hertzberger, 2009, p. 11



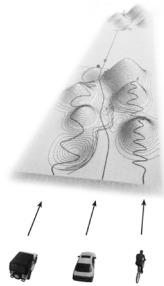
a connection



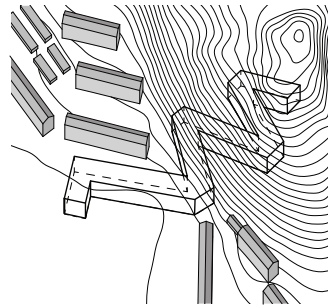
1. *response to the surroundings*



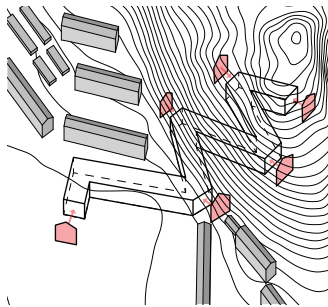
2. *creation of a schoolyard*



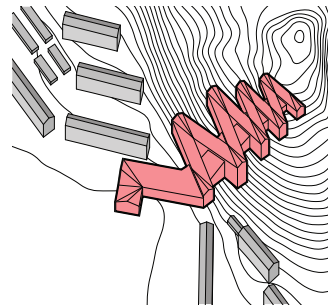
3. *'projecting force'*



4. *adaptation to topography*



5. *traditional roof typology*



6. *Learning Street!*

The location in Kålltorp offered us with a challenging yet interesting topography: a wide and flat field besides a densely wooded and steep hill. Through combining both, the shift of topography and vegetation of the plot with our lively imagination of a school led to mind-sets such as 'a journey through high school', 'the school - a long and winding road', 'community and privacy, exposure and security – like wandering through different stages of vegetation'.

When it comes to the process on the site we started off with a simple linear shape. The surrounding buildings, through their very specific position, created a funneling effect that we had to address in a suitable way. In order to react to this situation we bended the stripe two times: first, to address the just described momentum and secondly to form a public square. In a further step, inspired by an article in the book 'Atlas of Novel Tectonics' by Reiser + Umemoto, we changed the overall shape according to how humans approach a hill: through a zigzag movement. After that, to give the building a relation to the surrounding buildings we applied the prevailing roof typology.

6. *FLUIDITY OF SPACE*

Based on topography and the different levels of privacy, our building contains five floors. They are all connected through one continuing space, 'the stripe'. As we mentioned before, the stripe is the core of our building and it does not only work as a communication area but also as an important social zone corresponding to our idea of fluidity. Flexible furniture and integrated greenery help to program the space but still keep its function relatively open. Depending on how people arrange the furniture, many social activities or studying situations can take place here: group study, lectures, exhibitions and the like.

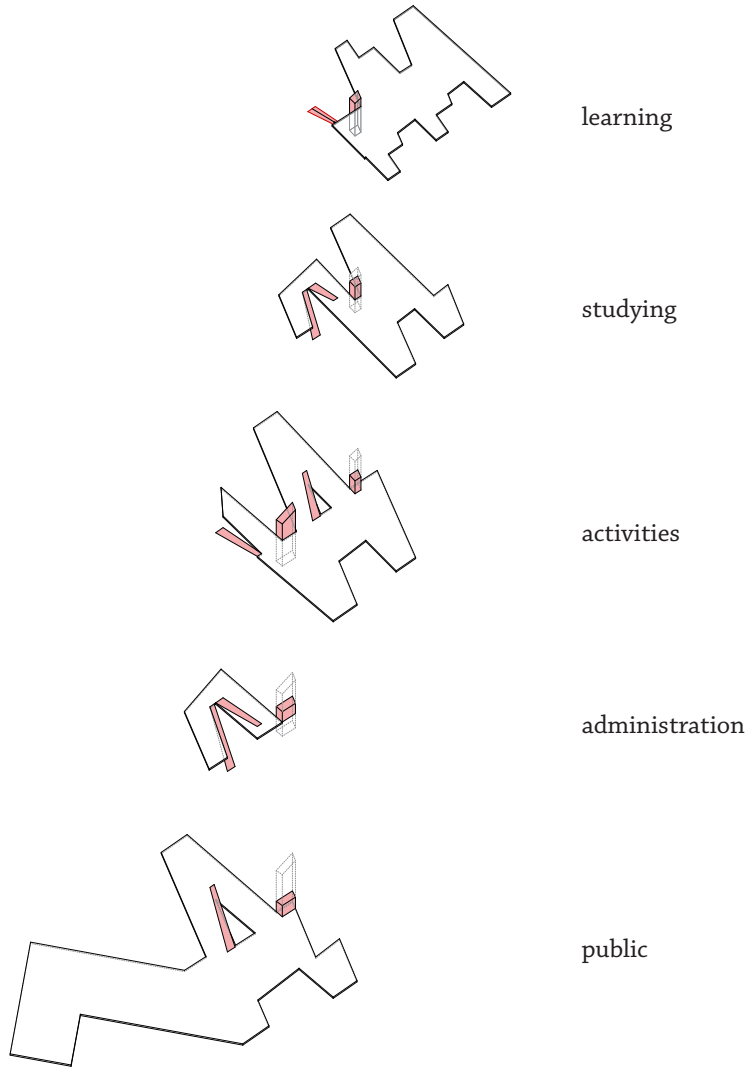
When it comes to the relationship between in- and outside, half of the building is located in the forest. The form of our building creates natural negative spaces between each of the wings. That allows us to extend the indoor study area to the outside. We created several exterior terraces at the higher levels where events such as lectures or social activities can take place.

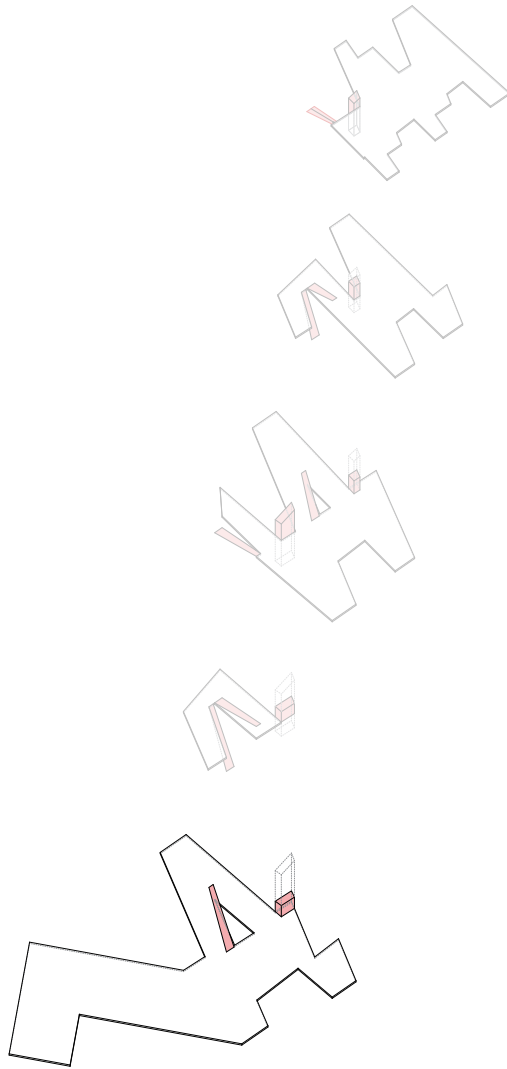
Another way of responding to nature is the use of wood as main façade material for wall and roof. In this way our building does not only stand out shape-wise but also because of its exterior appearance when comparing to other school buildings in this area.





7. INTERNAL ORGANIZATION





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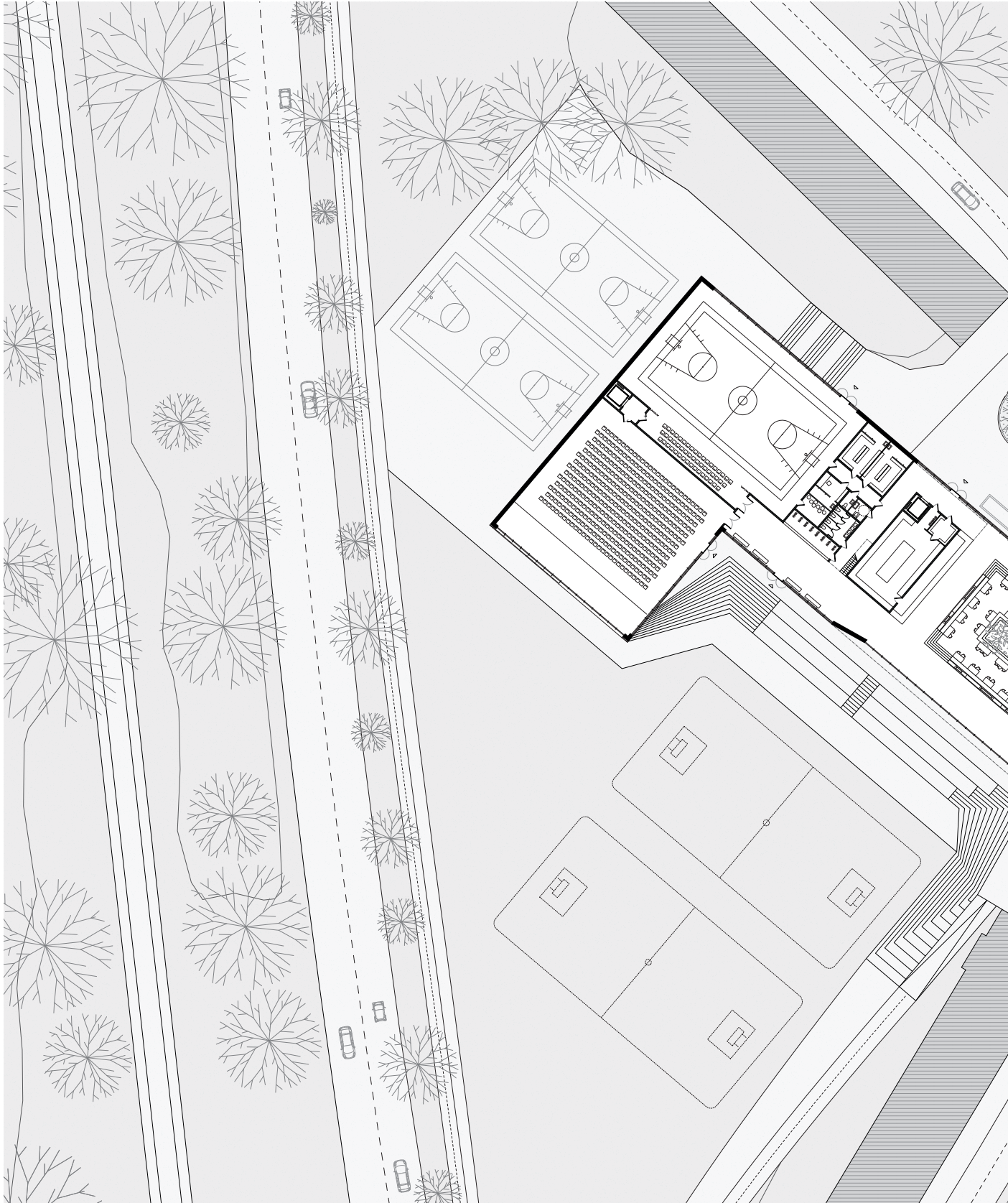
On the ground floor we positioned the public area of the school on the field where it also responds to the building's courtyard. This zone contains a sports hall, multi-functional auditorium, café and a library. They are all accessible for the community, even on evenings and weekends.

The courtyard can host many activities such as two bandy fields in case of a sports festival, outdoor exhibitions or any other kind of open-air related activity.

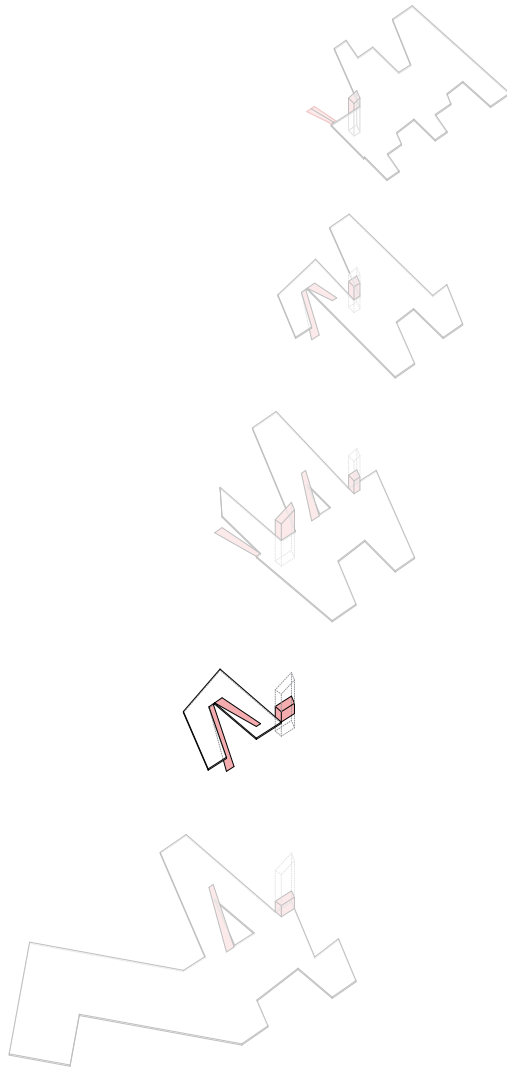
In the sports hall regular school sport classes, evening sport classes for the community, even lectures, reading festivals and other events that require a bigger multipurpose space can take place. Up to 50 people fit into the audience area. Apart from that an easy access to the outside allows for close connections to the open-air sports field. The multipurpose hall is able to host up to 400 people. This is where common school lectures, concerts, dance shows or general rehearsals take place. Through its unspecific dimensions it is a quite flexible space that can be adapted to many occasions.

Visitors can pick up a quick snack and a cup of tea at the café. During special times, such as lunch breaks or in the evening it even serves as restaurant. There are two areas belonging to the café: one of them is located in front of it under a wooden structure which is shaped like a tree where lamps and artworks are mounted to give a cosy atmosphere. Behind the kitchen there is a stair to access the upper floor where the visitor has an overview both over the entrance level and even into the sports hall.

The library acts as knowledge hub providing all, students, teachers and the public with a great variety of different kinds of media. There is a black box for movie projections and flexible furniture for adapted researching or learning situations.







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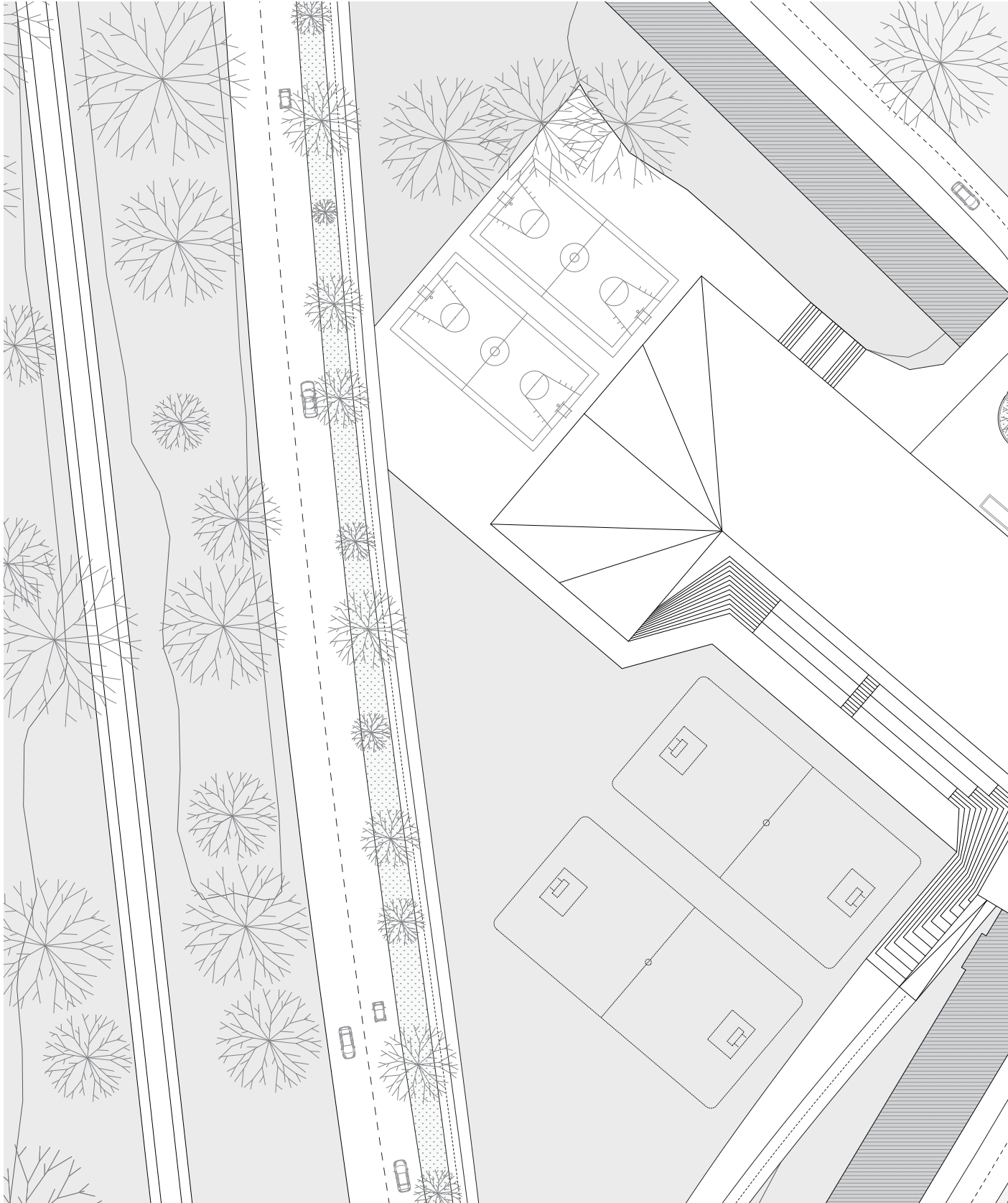
administration

When visitors enter the building they can immediately see the administration offices which are located above the library entrance. The rooms are surrounded by glass walls which allows for daylight from the courtyard. Additionally to that visual connections to the greenery inside the courtyard are established.

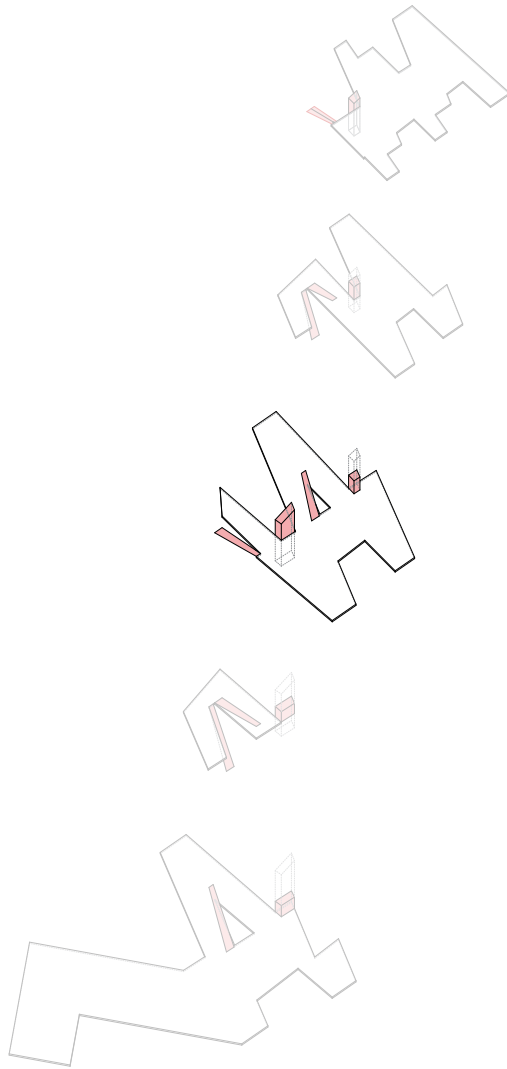
When students or parents want to meet the staff, they can wait outside of the office and look down into the library or out through the big window in the end of this wing.

In the main office space all of the staff works together on one table. That does not only symbolize a feeling of 'everyone is pulling on the same string' it also simplifies the transfer of information. Apart from this area there are a couple of secondary spaces such as a meeting and a print room and document storage.

On the opposite side of the wing there is a lounge area where we imagine staff and teachers to have informal meetings, mingle and share their impressions with each other. Different types of furniture have been organized in order to provide certain privacy to meet and talk for example with parents and students.







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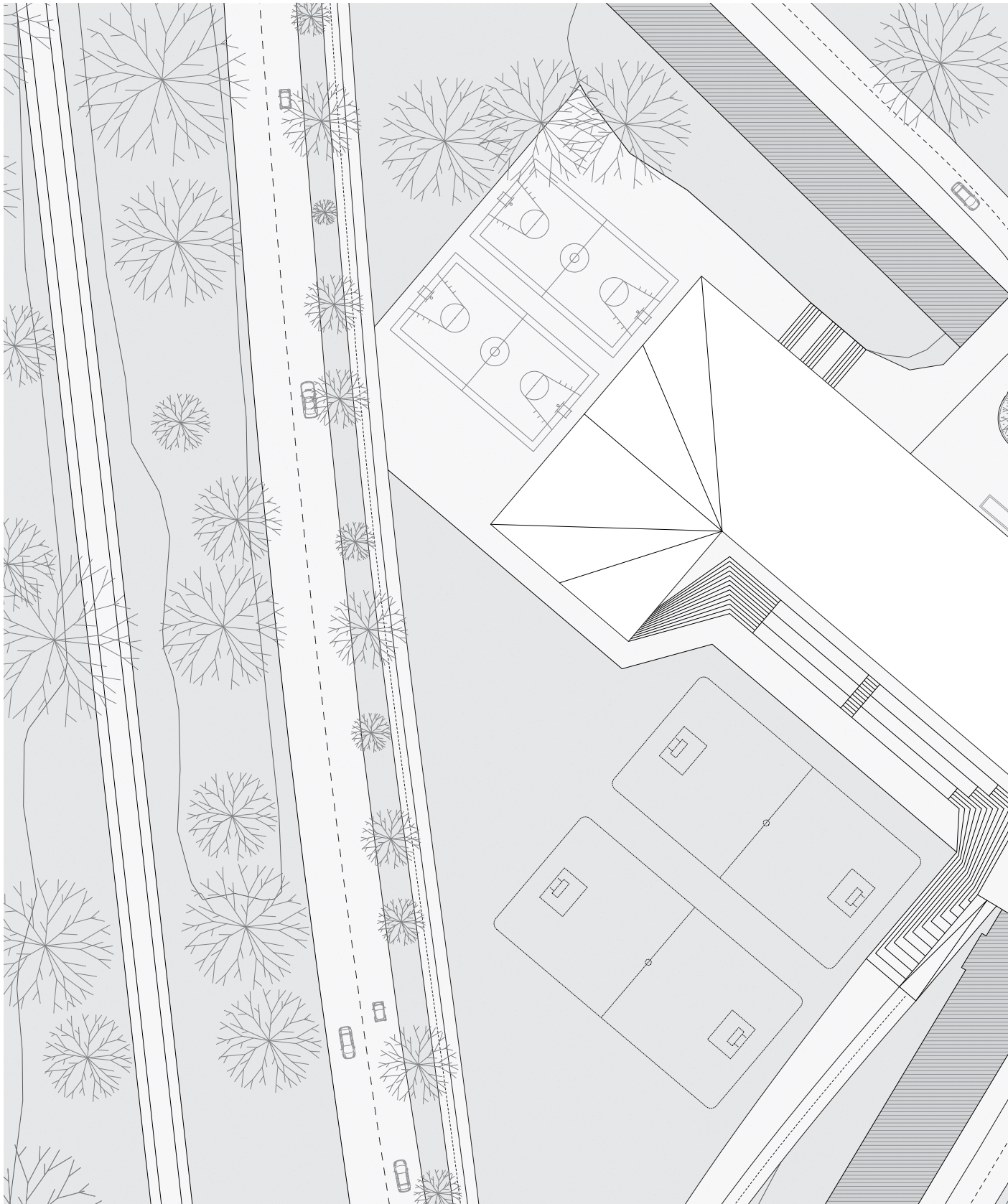
activities

This part of the school hosts the activity level. Different kinds of visual and performing arts are divided between three main rooms: art, music and acting.

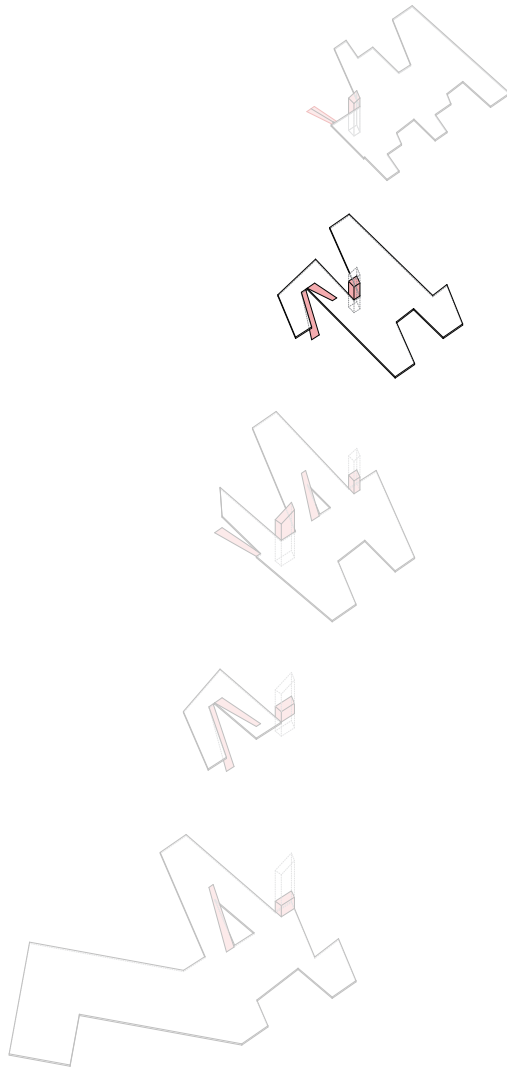
The music-wing in the northern part of this area is the biggest of them allowing for a set of arrangements such as a piano podium for a small concert or a band area for rehearsal. Four smaller music rooms are closely situated providing space for smaller group teaching. On the other side of this wing a lounge area for informal learning is located which at times also serves as waiting zone for the practice rooms.

The art room contains two levels providing different sightlines and functions. While downstairs the students learn the basics of graffiti which they are also able to apply immediately on a test wall in the open-air teaching area next to this room, in the upper floor an ordinary painting class is going on.

The acting room is the most intimate of all of the rooms on this floor. Here students are urged to explore themselves, interacting with each other on a very emotional basis. Since the students usually collaborate on a rather neutral knowledge base, these special classes give them the opportunity to address each other on a different level. And finally the multimedia rooms are available for digital art or music classes where new software can be explored and the approach to art extended.







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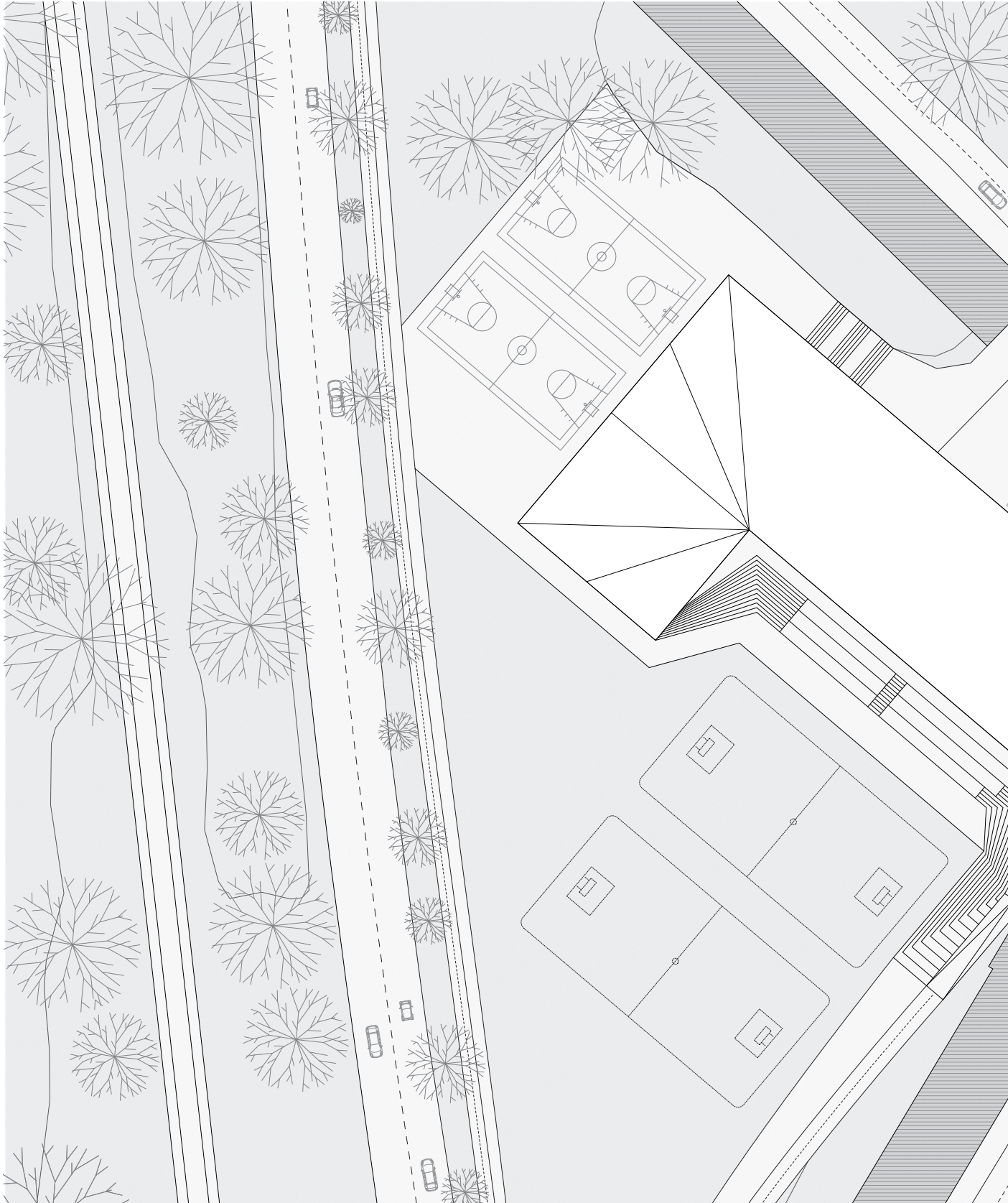
studying

In this floor different spatial configurations according to different learning preferences are available. Exposed or protected, the student can choose where to be. Additionally, there is a cinema room for bigger presentations or watching movies. Lockers are located under the lecture stairs in case students want to store personal items.

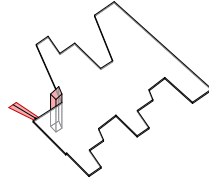
In order to adapt to different needs of studying, we designed small bookable rooms which allow protected group or private working. In some of the spaces we also introduced projector screens to help improve group discussions.

Breaks are important moments in schools. Student kitchen, lockers, a charging station and toilets create natural meeting spaces on this level.

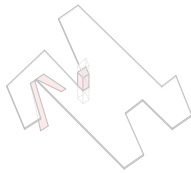
Apart from that we integrated a recreation area, where students can hang out and play different games such as ping-pong, billiards or table football. A big glass wall up to the roof separates this area from the music room which is located downstairs. Students can watch musicians perform and at the same time look out into the forest through the big exterior window.



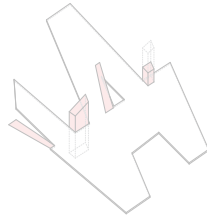




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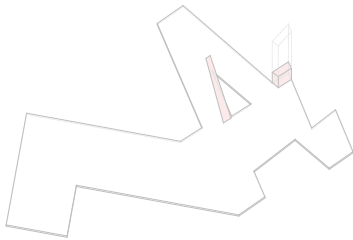
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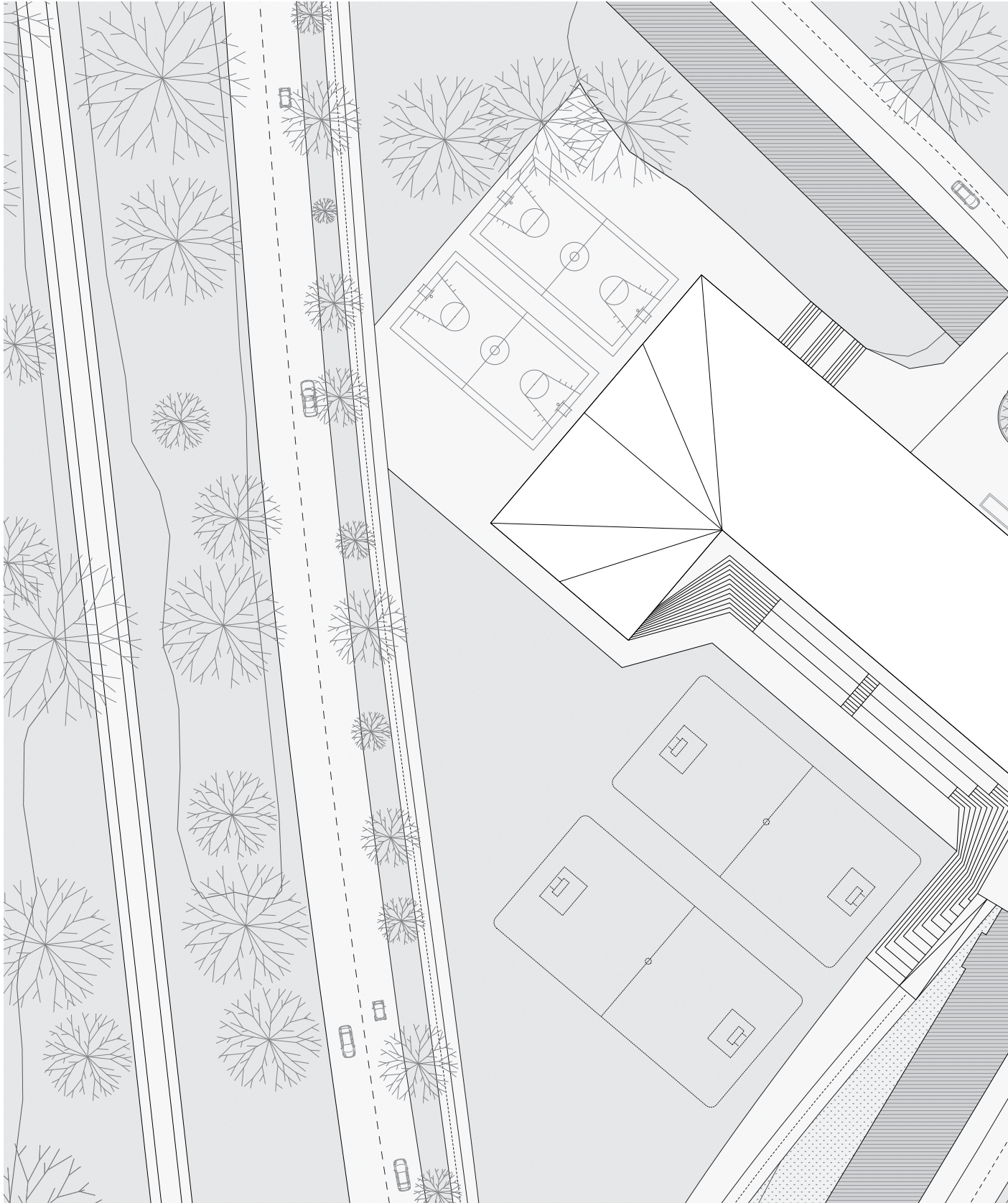
We tried to minimize the numbers of closed classrooms but still provide some acoustically protected lecture halls. These rooms all contain a staircase and are the main fixed lecture areas. Through this a connection between the learning and the studying area as well as the exterior is established. Another two rooms, located in the northern part of this level can be easily transformed into dark spaces for movie viewings or presentations.

We do not understand this high school as a place where classes are separated by age but rather by topic or interest. In this sense groups can be formed by and temporary classes can be composed of differently aged students.

The rest of the area is characterized as open plan learning. Depending on how students organize the furniture, lectures or many other studying situations can happen here.

In the last wing, we placed two special rooms. One, situated in north is the science room with movable sink-elements and it has the potential of extending to the outdoor terrace. The other one, facing south is a quiet reading room and it can also be opened up to the exterior.

We want to activate all the walls in this level by placing colour boards. We imagine students can write and discuss about their thoughts here and other people might get some inspirations when they pass by. This is supposed to emphasize the potential to learn from each other.





work in progress



8. IMPRESSIONS













9. *FROM DAY UNTIL NIGHT*

The concept for this building is a common meeting place: from day until night. It should not only provide space for its main users, students and teachers, but also for the public. Reaching from a more exposed open field up onto a more intimate wooded hill, the functions are arranged according to their privacy levels.

As you can see on the upper picture, teaching takes place in the most upper levels of the building during daytime, if the weather allows both on the in- and outside. Students use the whole building according to their teaching and learning preferences, privacy understanding and interest on the basis of democratic place-making. The public space on the field is either used by them for sport classes, lectures, researching in the library or a cup of tea and a snack in the café during self-set breaks.

The picture underneath shows the possible scenario of an evening light exhibition. In this case the courtyard is used to exhibit light elements such as glowing pavilions. The visitors can visit both, the in- and outside of the building, transforming the whole venue into a spectacle. Artists are invited to give workshops, lectures and speeches about their installations. Students contribute with pieces they have beforehand crafted in their art classes. There might be some students dressed up as pantomime, entertaining parents. In the sports hall there is no light but you can get a glimpse of light moving through the dark - a dance show by the schools ensemble. In the big lecture hall there is a small concert by some of the students. They are engaged into a sound experiment. Instead of an ordinary arrangement they wander through the space, sometimes exposing their sounds to the other members, sometimes you can only hear the sound of one of them.

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12. ABOUT US



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