

Building for children has once again become a hot topic for architects, particularly with the recent announcement in January 2019 of the *Gute-Kita-Gesetz*, a new law in Germany aimed at improving the availability and quality of nursery schools. In recent years, no other building typology has changed and evolved more rapidly than educational facilities for children.

Architectural solutions must go far beyond the structural aspects of the respective building: they must ensure flexibility, safety, and accessibility, and meet the current technical, ecological, and energy-efficiency standards. This seminar explored nursery schools and childcare facilities from an architectural perspective.

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18



Research-Based Design Building for Children in Theory and Practice

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Natascha Meuser



Hochschule Anhalt

Anhalt University of Applied Sciences

Research-Based Design
Building for Children in
Theory and Practice

Research-Based Design

Building for Children in Theory and Practice



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The workshop was taught by Prof. Dr. Natascha Meuser (Department of Interior Architecture) in collaboration with architect Danilo Surweiher and interior architect Andrea Männel (Managing Directors of FRÖBEL Building Department).

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»Designing the best cities for children involves recognising their right to play as well as learn.«

Takaharu Tezuka

INTRODUCTION



Picture: Istock

The Urban Nursery School From Childcare Centre to Place of Development

Natascha Meuser

Building for children has once again become a hot topic for architects, particularly with the recent announcement in January 2019 of the *Gute-Kita-Gesetz*, a new law in Germany aimed at improving the availability and quality of nursery schools. According to the German government's estimations, there is currently a shortage of carers and built space for almost 300,000 children in the country.¹ In recent years, no other building typology has changed and evolved more rapidly than educational facilities for children.

Architectural solutions must go far beyond the structural aspects of the respective building: they must also ensure flexibility, safety, and accessibility and account for the current technical, ecological, and energy standards. This seminar explored nursery schools and childcare facilities from an architectural perspective. The aim was to provide a cultural-historical account of the development of educational buildings for



On 1 January 2019, the »Good KiTa Law« was established. With this law, the Federal Government of Germany is investing a total of 5.5 billion euros until 2022.

¹ Zeit Online from 17 May 2017: <https://www.zeit.de/gesellschaft/familie/2017-05/kinderbetreuung-kitaplaetze-betreuung-sluoecke-deutschland-nrw-bremen>, accessed: 11 January 2019



Field trip, April 2019
Pictures: Natascha Meuser



Studio work



Danilo Surweiher, Andrea Männel; Naatscha Meuser and students



children, to define design tasks, and to formulate quality standards. Students developed, through guided research and methodical design, planning parameters as well as models for organising space. They then implemented and present these parameters and models in a design of their own.

After an individual's own home, the kindergarten is the first building whose architecture is firmly engraved in their memory. In kindergarten, children gain their first experience of themselves as active members of society, away from home. The organisation and design of the space in which this personal development takes place is particularly important. »Kindergartens are constantly subjected to change in educational methods«, explains teacher Elisa Steinfeldt. »Therefore, above all, rooms must be flexibly equipped for diverse uses.« But still, kindergarten architecture is especially good if it can last over many generations of children. And what about the increasingly common notion of the school building as the »third teacher«? Designed space always has an effect on human beings.

Step 1: Research-based Design

Formulating design parameters for buildings for children is a challenge at first. The requirements of the building mean that planning parameters have to adapt to the scales and habits of both children and adults. What are the outlines of the generally valid aspects for a design? From the analysis of existing buildings, regularities and trends can be discerned, which may be relevant for future designs. Although this analysis by no means claims to be complete, by observation of these parameters, the design and planning of a kindergarten building can be carried out. The section that follows is intended to serve as a planning aid for the development of a design. It can also be used as a communication platform if all parties involved in planning and construction want to agree on an optimal building concept including architects, specialist planners, pedagogues, building sponsors, and users. It should be stated at the outset that the concern here is architectural and pedagogical design parameters. That should also make it clear that the planning of a kindergarten building



should be entrusted to an architect who will of course engage landscape architects and specialist planners. Only if the architect from the beginning creates a collaboration with specialist planners for building technology and the surrounding grounds, can a design emerge that successfully reflects the needs of the children, their teachers, the parents and visitors, and thereby the kindergarten.

Step 2: Methodical Design Solution

Does this take into account that the architecture itself hardly needs to change – so long as you follow the proven rules of spatial art? In this complex planning task there were many questions, that had to be solved. The methodical design process hereby helped the student to find a structured way of solving problems by using object-design-knowledge within a design team. The central aim of the course was for students to learn how to independently gain a deep understanding of a problem area, formulate the problem based on thorough research, and to develop an individual, interdisciplinary, and methodical design solution.

Starting with a team design process, any barriers of communication had to be overcome by the team members by solving the misunderstandings and the development of the shared insight. Through visualizing the individual design contributions within the design team, the students earned a deep understanding, sharing and collaboration within the design process. By structuring activities and communication between the team members, the aim was to create an individual reflection on the design results. Thus, dialogue and true cooperation mostly leads to sustainable knowledge about the design project.

Step 3: Final presentation

The sketching phase leads to the synthesis phase, where the design comes together. At this stage, the logistics of the building and site, the construction, the form and materials etc. become united into one entity. Finally, the presentation phase covers all the material used to present and explain the project. The audit involves the presentation by the author and a subsequent public discussion.



Source: Istock

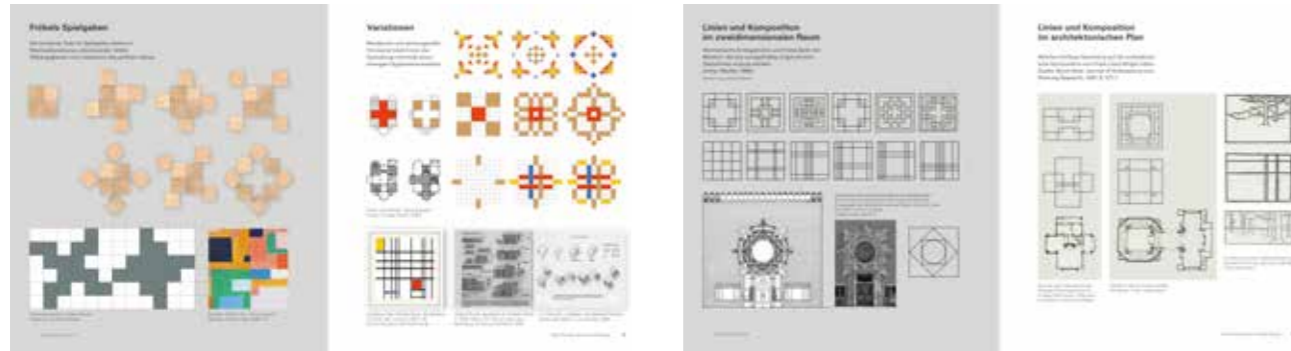
Sustainable Structures for Open Development Spatial Qualities in Construction for Children

Natascha Meuser

Looked at in terms of pure statistics, the kindergarten is – at least in most parts of the world – the second building to feature in the course of each and every individual's life and it is one that should be consciously owed recognition as an architectural entity. For it is here that children spend much of their day and indeed their young lives. And doesn't everyone look back with fondness upon both the actual architecture and the specific room layouts experienced in their kindergarten? These places do indeed occupy a special status in terms of their contribution to society since it is after all in these buildings that children and young people truly learn for the first time how to set their goals and how to conduct themselves as active members of society – set loose from the strictures of the parental home. In this sense, kindergartens are places in which the interplay between the individual and society finds expression through the medium of architecture. It is precisely these child-oriented buildings that this book intends to address. It is a risky undertaking to attempt to encapsulate and define a building typology which is currently in the midst of a process of

transformation – one such as few others have experienced. While other building typologies merely require a reworking of the outer envelope and basic lines of a building, the kindergarten of today is characterised by entirely new concepts of learning and usage, and these, furthermore, can be inherently difficult to reconcile. It is only offices and zoo buildings that have undergone a comparable transformation over the past decades. We are still in the midst of a process of social change and it will only be in ten to twenty years' time that we will be able to evaluate whether digital media for example is set to revolutionise the kindergarten typology too.

»The space around us is the third pedagogue« – so claimed the Italian educationalist Loris Malaguzzi. The child is therefore not only under the pedagogical influence of social interaction with children of the same age, alongside that exercised by the teaching staff at individual educational establishments, but they also come under a pedagogically acknowledged influence of the architecture framing their surroundings. Intrinsicly linked to this is the requirement that the architect must be alert to



Design according to Froebel at Anhalt University of Applied Sciences in the field of Interior Planning (Design and Gestalt)
Source: Natascha Meuser

his or her social responsibility and to the consequences of their contributions to the art of construction. How prevailing educational concepts supersede each other, along with the changing perception of the child, can readily be seen in the architectural history of the school building, but more immediately in that of the kindergarten. Although the residential development project implemented around 1775 by Pastor Johann Friedrich Oberlin in Waldersbach, Alsace, may be interpreted as the dawn of the kindergarten whereby it emerged as a self-governing undertaking, it is nevertheless Friedrich Fröbel, student of Pestalozzi, who is commonly regarded as the creator of the model design. Fröbel sought to replace the children's charitable institutions which had arisen amid the utter poverty prevalent in the period of early industrialisation. Although lacking in any specific educational vision, these institutions were intended to offer a place of refuge for children whose parents were unable to look after them. In his magnum opus *Die Menschenerziehung* («The Education of Man») Fröbel portrays architecture as the fundamental driving force behind the child's

at least the male child – in the latter's encounters with the world. »Everything must submit to his formative instinct; there in the heap of earth he builds a cellar, a cavern, and on it a garden, a bench. Boards, branches of trees, laths, and poles are made into a hut, a house; the deep fresh snow is fashioned into the walls and ramparts of a fortress; and the rough stones on the hill are heaped together to make a castle. All this is done in the spirit and tendency of boyhood.« Fröbel had, however, not yet placed the architectural composition of a kindergarten at the forefront of his considerations. Thus he was able to quite easily convert a townhouse in Bad Blankenburg, Germany, into the world's first kindergarten. Within its interior children were now able to use those natural gifts which had been fostered by Fröbel to explore the world, both seated at their desks and accompanied by pedagogues; they could organise games and group activities or indeed choose to cultivate plants in the adjacent garden and come into contact with nature in other ways. Here, education would initially be delivered within a familiar environment – without any

particularly special architectural features – since the prime purpose was to enable the child to relate to his or her surroundings. »These are the things of his nearest surroundings – the things of the sitting-room, the house, the garden, the farm, the village (or city), the meadow, the field, the forest, the plain. The sitting-room, then, furnishes the starting-point for this orderly study of nature and surroundings, which thus proceeds from the near and known to the less near and less known.« One main objective of the kindergarten as founded by Fröbel was also that it should act as a visual role model for mothers of young children, who could then emulate within the home environment those concepts developed by Fröbel. They would thus recognise the importance of play as a way to acquire penetrating insights into the world through observing the child. This concept, which found rapid proliferation across the world, was in the meantime not permitted in Prussia, Bavaria and other German states. Although Fröbel himself acknowledged that his ideas were actually not primarily aimed at the education and

production of judges, soldiers or priests but rather human beings, this did not essentially find favour with the then strictly hierarchical Prussian state, which immediately after the 1848 revolution was in large part geared towards a goal-oriented education strongly linked to firmly well-defined roles to be played in society. Since Fröbel's entire system is based on keeping children healthy and fit whilst educating them to be capable of independent thought, these kindergartens were naturally a thorn in the side of the Party, for whom nothing was more abhorrent than an increase in the number of independent thinkers amid the citizenry. The Party therefore mobilised everything in order to curb and oppress the growth of kindergartens, and we had the sublime spectacle of a struggle between the ultramontanists and the comrades on one hand and children and defenceless women on the other. Female kindergarten teachers of this reactionary period were indeed subjected to a form of martyrdom which was completely on a par with that of those many men who were persecuted at that time for their convictions



Le Corbusier, *Unité d'habitation*, Marseille:
the Kindergarten was arranged on the roof of the building.
Photo: René Burri, 1958

Model of the *Unité d'habitation*, Marseille
Yale University, New Haven
Photo: Natascha Meuser



Kindergartens were prohibited by the police and their principals suddenly found themselves deprived of a livelihood. Those people who educated female kindergarten teachers by giving lectures and classes were forced to stop teaching and there was no shortage of disciplinary reprimands of the most diverse nature. However things in this respect have turned out well, in the same way as other constraints on progress, and, »Today kindergartens can be found in countless places and soon there will be no more cities or towns without one,« writes Luise Otto-Peters, a socially critical writer, in 1866. Indeed, between 1851 and 1860 female kindergarten teachers had virtually been placed under police surveillance, a process which extended to their being expelled; and many fled abroad – thus exporting more than the concept of the kindergarten to the rest of the world. In France, for example, the concept developed by Jean-Jacques Rousseau – that children are not just smaller and otherwise deficient adults but also individuals at their own stage of development – brings with it consideration as to how an appropriate environment should be established.

When the social entrepreneur Jean-Baptiste André Godin built the Familistère de Guise in the middle of the nineteenth century according to the concepts of Charles Fourier – regarded as the first example of modern social housing – he also in 1870 included spaces for the care of working-class children. And although Fröbel had solely intended his kindergartens as a complement to home upbringing it was ultimately Maria Montessori who demanded that pre-school education be firmly embedded as the first step in society's provision of child welfare. The kindergarten is then discovered as an independent construction task during the Neues Bauen (New Building) movement, when the work of the architect is declared a central pillar in the establishment of a society worth living in. Demands are set so high that these can never be met. Optimised as an industrial workplace the Frankfurt Kitchen by Margarete Schütte-Lihotzky is not only supposed to be helpful, but also to enable the »New Woman« who goes out to work with efficient mastery of meals within the smallest of spaces and without assistance, all of which is seen as a necessity of everyday life. The

fact that modern architecture sees itself as called upon to participate actively in education can readily be seen in the fact that Fröbel's playthings – expressed in building bricks based on geometric shapes – served the Bauhaus in particular as a source of inspiration. Through the use of sound architectural frameworks it is implied by the Neues Bauen movement that the »New Child« also can be elicited. However, the proposed concepts remained in draft form only. A kindergarten design by Walter Gropius was never implemented. Rudolf Steiner then delivered a certain momentum to kindergarten architecture that should not be underestimated; he excelled not only as an educational reformer but also as the co-founder of anthroposophic architecture. Although he certainly offered general suggestions on his preferred criteria to be observed in construction, he made no specific stipulations regarding the construction of an optimum architectural environment for children. Consequently a separate building style for kindergartens failed to emerge here too, especially since early childhood education was not regarded

as the responsibility of the State, but was instead undertaken by various institutions with different objectives. For example, a dispute raged between Fröbel and Maria Montessori in the 1920s when the Italian educator Montessori opposed Fröbel's interpretation of »free play« with a comparatively rigid methodology of knowledge acquisition which placed tangible demands upon the parameters of the structural surroundings. It was not until the Weimar Republic, when youth welfare offices were set up as supervisory authorities for kindergartens, that a lively exchange of expertise arose, resulting in minimum building requirements, among other things. The guidelines arising from this exchange contributed to the formulation of the first regulatory standards in Germany. By contrast, the concept of the kindergarten was soon reflected in urban planning in socialist states, which took a lively interest in childcare and pre-school education. A kindergarten was to be found in each housing estate. When Ignati Milinis and Moisei Yakovlevich Ginzburg built the experimental *Narkomfin Communal House* on Novinskii Boulevard



The Narkomfin Communal House was built as part of the state-run Soviet Experimental Building Programme (1928) on the Moscow Garden Ring. In the glass pavilion, in addition to communal facilities, there was also a temporary kindergarten. Photo: Archive of families Miljutin and Ginzburg, Moscow

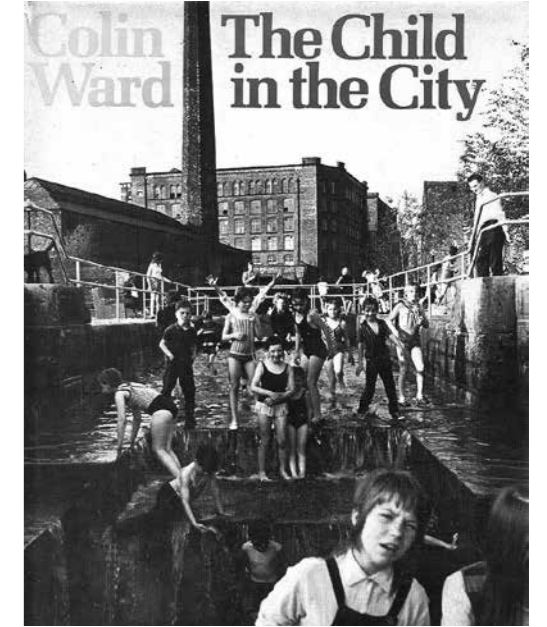
in Moscow between 1928 and 1929, it naturally followed that they included not only a communal kitchen but also a kindergarten. Much more frequently found, however, are kindergartens as free-standing pavilion buildings – assuming there is sufficient space – a logical consequence of the demand that all children should, where possible, have direct access to a well-secured garden, preferably laid out as an atrium area flanked by protective out-buildings. In socialist urban planning, the mostly two-storey-maximum low-rise buildings stand out from the taller residential properties.

Large windows catered for the maximum amount of daylight in these premises which are distinguished by a communal room facing south wherever possible as well as a sleeping area, staff rooms, and rooms for the storage of toys and cleaning materials. This is accompanied by sanitary and kitchen facilities, whereupon the latter are scaled down where food deliveries are preferred. Often emulated were the principles of the Hallgarten, Waldorf and Montessori schools – the main focus of which lies in well-lit rooms, natural materials and small

units within the larger framework. Other concepts, such as the kindergarten which Le Corbusier built in 1952 on the roof of the Unité d’Habitation high-rise, enjoyed negligible appeal. One could describe the Kinderladen movement from 1970 to 1980 within the Federal Republic of Germany as a kind of architectural relapse, where, once again, existing edifices – this time abandoned retail space within Wilhelmian-era buildings – were converted into childcare facilities. The squatter scene agreed with the concept of anti-authoritarian education. Instead of having a kindergarten featuring its own green spaces, visits were undertaken to neighbouring public parks. The concept of orientation through Nature – already so important to Fröbel – carried the ‘forest kindergartens’ invented in Denmark to extremes, since, apart from construction vehicles, these dispensed altogether with anything related to construction wherever possible.

Amid all this, standing like monoliths, are some magnificent kindergartens by distinguished architects. Oscar Niemeyer’s first independent oeuvre is a kindergarten in Rio de Janeiro (1937), which

Colin Ward viewed the environment as a primary educational resource and argued that out-of-school spaces should also provide valuable learning experiences. In an essay in *Anarchy Magazine* (1961), he compared the adventurous playground to a parable of anarchy. Photo: Colin Ward, *The Child in the City*, 1978



cannot deny the stylistic influences of his teacher Le Corbusier. Noteworthy instances are the light-flooded kindergarten Asilo Sant’ Elia that Guiseppe Terragni built in Como in 1937; the Satsuki kindergarten, in Osaka, which Takamitsu Azuma built between 1969 and 1973 as an example of atrium architecture, featuring an irregular arrangement of windows; Henri Ciriani’s kindergarten in Torcy, built in 1989, or the kindergarten in Stuttgart-Luginsland by Günter Behnisch (1990).

Even today spatial requirements and architectural standards for kindergartens have again undergone significant changes – all of which reflect changes in aims, methods and the tools for transferring knowledge and teaching. Kindergartens comprising one large and one small, sparsely furnished room with a toy box and a corner for dolls, paints, and building blocks have become obsolete and are being replaced by a decentralised landscape for play.

It can therefore be said that the task of building kindergartens as an independent architectural discipline is still relatively new and, apart from meeting essential needs – for instance, age-appropriate

sanitary facilities, offices, communal rooms and connectivity with outdoor areas – standards have scarcely been established in its development. The nature of its uniqueness is emphasised in the press whenever inspirational learning environments enabling sensory and social experiences are demanded. In an era of diverse pedagogical approaches architecture must orient itself to an understanding of the tasks faced by kindergartens. This means that today’s architects have at their disposal multiple possibilities when observing regulatory requirements in terms of fire protection, noise insulation, and so on, which are insisted upon and should be oriented towards the latest thinking in teaching theory.

Taken in quantitative terms alone, this may be an area for which there is increasing demand in the foreseeable future, since a shortfall of places is being diagnosed across the board, combined with the introduction of a legal claim to a place at a kindergarten. All of this is related to a propensity towards entrusting solutions to major societal problems to this-or-that institution or body. Given the rebalance in weighting that education for children under six

holds, the safekeeping of relatively homogeneous age groups is being replaced by a multi-functional educational institution that is supposed to achieve everything – from multi-cultural integration and the promotion of languages and equal opportunities to the facilitation of parental full-time employment through flexible all-day childcare. Requirements derived from this – for example, those related to accessibility – can hardly be met within existing buildings. Rolling out care for children under three – who still need to have their nappies changed – has severely tested sanitary infrastructure within nurseries across the Federal Republic of Germany in past years. Kindergartens today thus represent a more complex planning task than in past decades. Nowadays aspects of accessibility and security, as well as social background and cultural environment, are at the fore, which could mean in concrete terms that increased admission controls, barrier-free access, and interfaith communal rooms become part of the job description of the architect.

Current upheavals within pedagogical theory which call into question universal laws also serve as a warning to architecture: educational concepts, as in the past, need to be perceived to be temporary and nor can they be based on constant, fixed birth rates. This requires more flexibility within architecture – an architecture which allows for changes in the perception of the child and their needs and which also takes into account more and more new generations of children who will actively help to construe their own learning environment. Ultimately, there is still no standard accepted curriculum for kindergartens in Germany with the result that, depending upon the institution, both adherence to the Free Play approach as well as to a more rigidly planned curriculums are possible. From the

child's viewpoint and at a purely functional level, the point is that a kindergarten has to embrace the aesthetics of learning, the aesthetics of play and the aesthetics of intuition.

Buildings for children must combine elements of freedom and experimentation with the promise of safety, protection, security and comfort. »By the time they are in kindergarten the child will often have been wrested out of their primary community, away from an immediate, nurturing and warm environment« notes Theodor Adorno. This fact must be borne in mind when it comes to kindergartens. It is the only type of building that truly places infants at the forefront, whereas even in family homes early childhood development is merely included more or less incidentally when determining utility factors. The adult world is continuously present in the person of the educators and this has to be taken into consideration in the sense of an appealing and healthy working environment. Other than that it is the child who serves as a barometer in all architectural considerations, something which is increasingly gaining ground. What began with a table and chair in miniature has now evolved into a distinct segment of the market. Entire sanitary ranges on a scale appropriate for children are being advertised by outfitters and manufacturers – most of the time at inflated prices. Here again, things have to be carefully weighed up, lest a clever, new idea turns out to be the opposite. Sooner or later children must be able to make their own way within the world around them. An infantilisation of architecture can be just as inappropriate as an exaggerated infantilisation of speech.

If the space surrounding us is meant to operate as a third pedagogue, then the aim of architectural planning appears to be the personalisation of that space.

The architect, who is traditionally seen as a mere intellectual originator of buildings and designs, would, albeit indirectly, become a pedagogue. The pedagogue Detlef Diskowsky disagrees when he argues that each profession should be separate – but at the same time he espouses a close collaboration between both disciplines. »Architecture is not intended to practise pedagogy, but rather to facilitate pedagogy; hence, planners must disengage from their own ideas on how a day-care facility for children operates and incorporate the knowledge of those pedagogues and others who work there into the design for teaching and workflow.« Architecture becomes an integral part of the pedagogical concept just as pedagogical objectives are ideally part of architectural considerations. Architectural design then can be seen to offer the perfect support to pedagogical concepts.

Architecture must not however escalate into mere individualism, particularly since the essence of architecture cannot be individual. Architecture is a social discipline. Architecture is able to gather many individuals under one common roof. In other words, good architecture obeys its own laws and pursues such neutrality in its form that it won't lose its function even in generations to come. If a kindergarten operates today on the model of behavioural enrichment and free play, this does not mean that its architecture must produce free forms. If environments created by man have taught us anything, it can only be the sensation of harmony, proportion, colour, and material – and, of course, the architecture around us.

The anarchistic progressive thinker Colin Ward, who postulates that the environment is the primary educational resource and has argued that spaces

outside educational premises in particular provide valuable learning experiences, has already spoken out against the completely unnecessary aestheticisation of kindergarten interiors. In his essay »Adventure Playground: A Parable of Anarchy«, published in 1961, he sees the playground as society on a smaller scale. It should not be a nice little sheltered bubble, rather it should facilitate genuine experiences. The concept of the adventure playground grew out of observation of what children actually did on patches of wasteland and on derelict areas and bomb sites. Children deem pre-formed environments to be less appealing than nature in the long term. This is a problem, especially within the urban environment: in the countryside there is nearly always a link to the external surroundings, but within the city there is an unnatural demarcation – particularly within kindergartens. This is also recognisable from the architecture of kindergartens, which nearly always have a direct connection to nature. In the city, however, there is an unnatural delineation – particularly since outdoor areas are to a great extent precisely laid out. The question now is how harmless artificial contexts can be replaced by more challenging ones where children are able to endlessly discover and make things anew – and not only within the interiors, but also now and then within urban outdoor spaces.

Now, what would be the constants of the building typology discussed here? To what extent do kindergartens need to respond to contemporary forms of teaching and learning? Which form of imparting knowledge favours which spatial form? Is an individualisation of kindergartens – as practised when dealing with residential buildings or hotels – wise? Which aspects are to be regarded as unalterable in the floor plans?

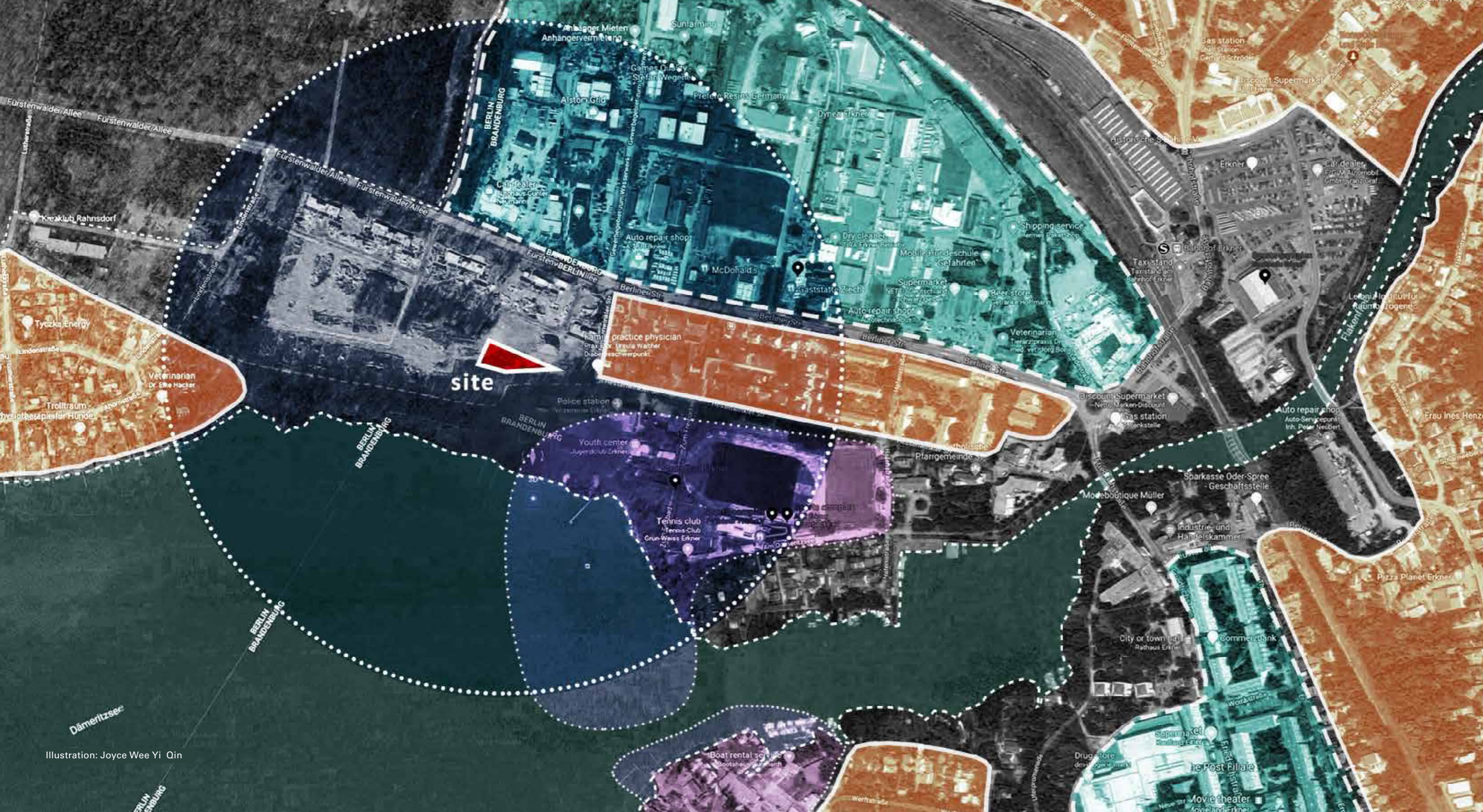
»We need discussion and debate on an international platform about whether the needs and rights of children to play and learn, uninhibited, are sufficiently understood and taken into account during the architectural design process.«

Takaharu Tezuka

BASICS

Research Findings and the Design

Communicating the
Importance of the
Individual Research
Question



site



A neighbourhood rich of nature elements (water, vegetation)



Leads to the city








Nearby supermarket

Path for bikes on site leads to this neighbourhood

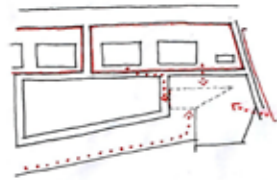
Site is in walking distance for residents in this neighbourhood

Possible work area in this district

Individual docks for some of the residents living along the water

-  Possible users
-  Edge
-  Path
-  Housing
-  Mixed use
-  Commercial
-  Green land

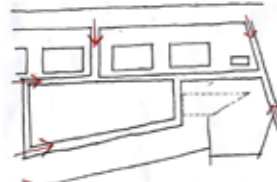
STRENGTH



Walking distance from the residential areas.

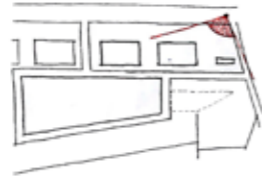


Site with adequate amount of nature elements.

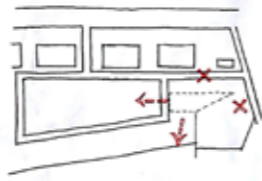


High accessibility for vehicles and pedestrians.

WEAKNESS



Linear primary road and blocking of view towards the site from primary road.

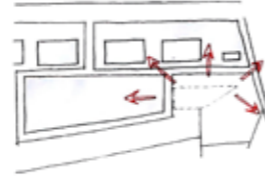


Limited positive views from the site.

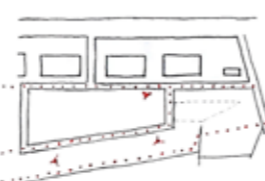


Walking distance to the other kindergarten located at the Western part.

OPPORTUNITIES



New place for teaching and educating children for the residents near the site.



Residents or passer-by from other areas can recognise the new kindergarten and spread the news to others.



Awareness of environmental issues and integration of nature as part of the learning.

1

Site analysis at Seewinkel, Erkner
Illustrations: Yan Wai Chun (1 to 4),
Zhen Fai Wong (6)



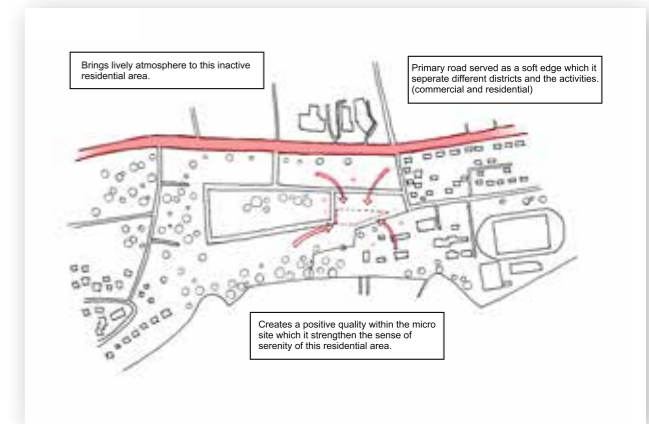
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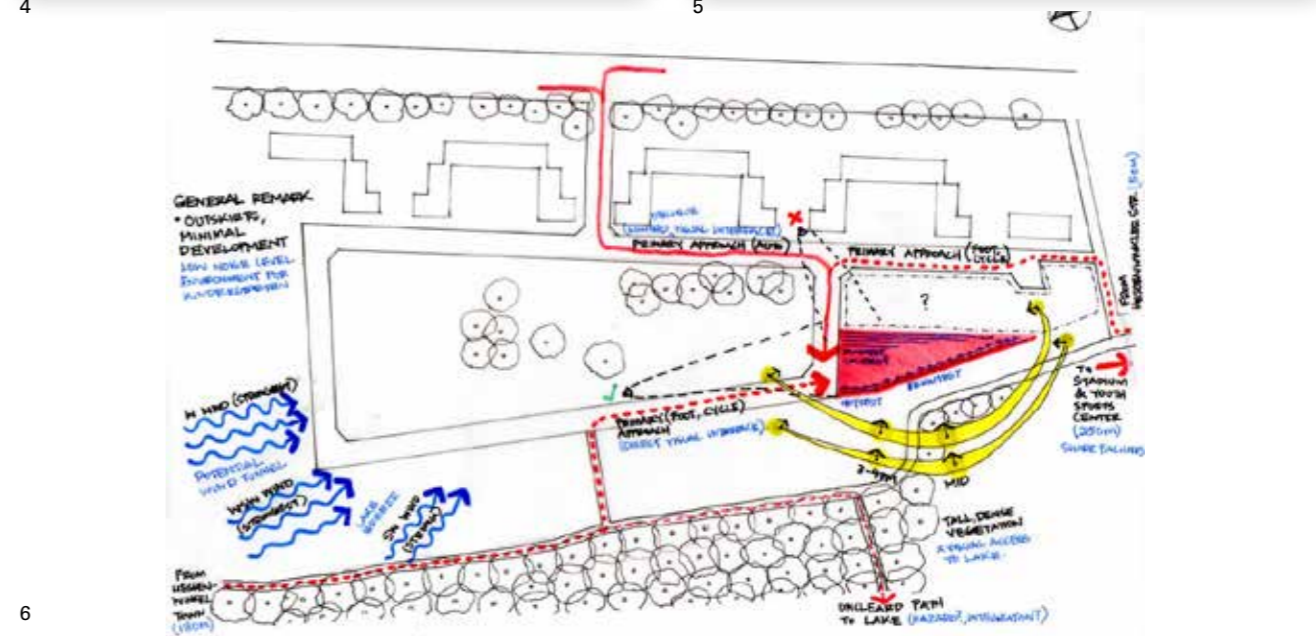
3



4



5



6

Pedagogy and Space

Research on New Learning Environments

FROM A CHILD'S PERSPECTIVE, EVERYTHING IS AN INTERACTIVE SURFACE WITH THE POTENTIAL TO BE SCULPTED, PAINTED

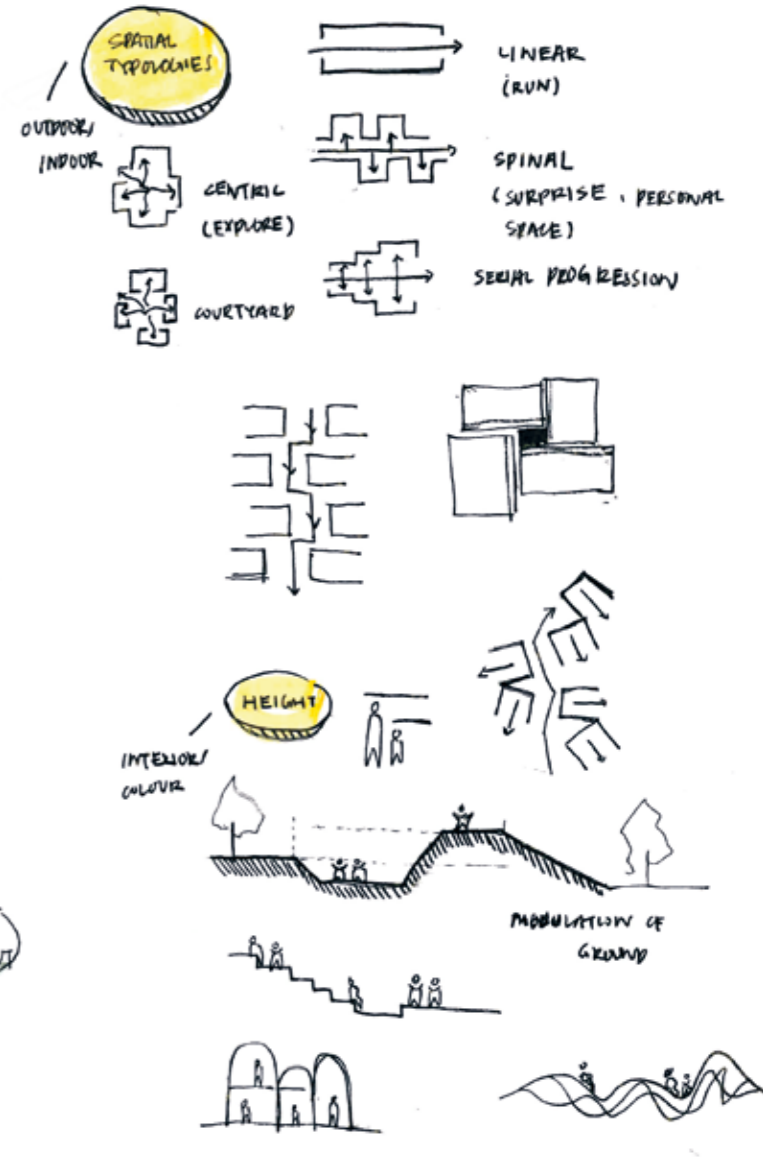
AIM TO PROVIDE AN ENGAGING, STIMULATING AND SAFE PLACE FOR CHILDREN TO FULLY EXPLORE, EXPERIENCE AND UNDERSTAND THE WORLD.



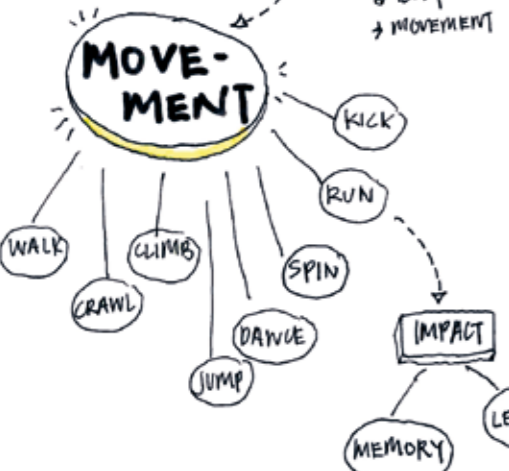
DEVELOPMENT



HOW ARCHITECTURE CAN INFLUENCE THE DYNAMIC MOVEMENT OF CHILDREN IN A KINDERGARTEN ENVIRONMENT?



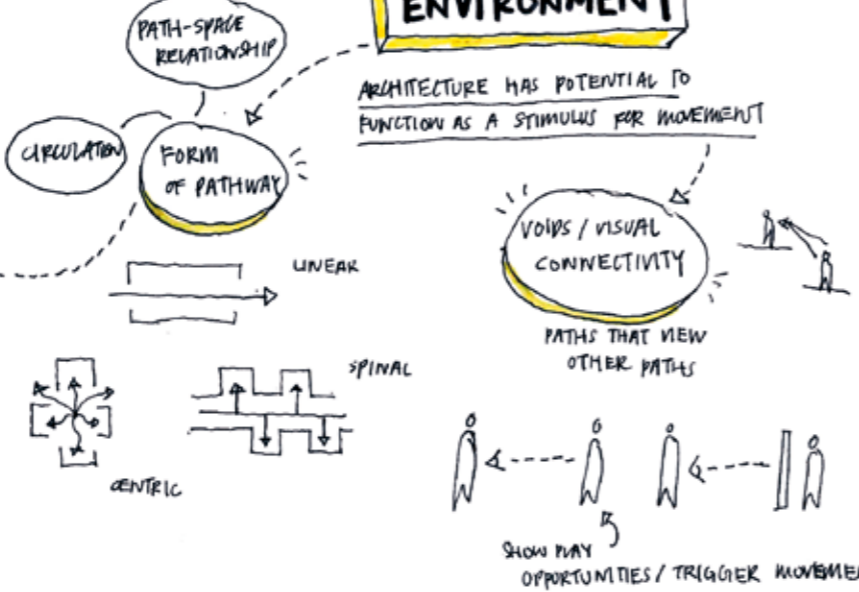
HOW CAN ARCHITECTURE FACILITATE AND ENCOURAGE CHILDREN MOVEMENT IN A KINDERGARTEN ENVIRONMENT?



CHILDREN NEED TO MOVE TO LEARN BECAUSE BODY IS A TOOL OF LEARNING

COMMUNITY
OPEN UP PREMISES TO LOCALS

ACTIVE ENVIRONMENT
ARCHITECTURE HAS POTENTIAL TO FUNCTION AS A STIMULUS FOR MOVEMENT



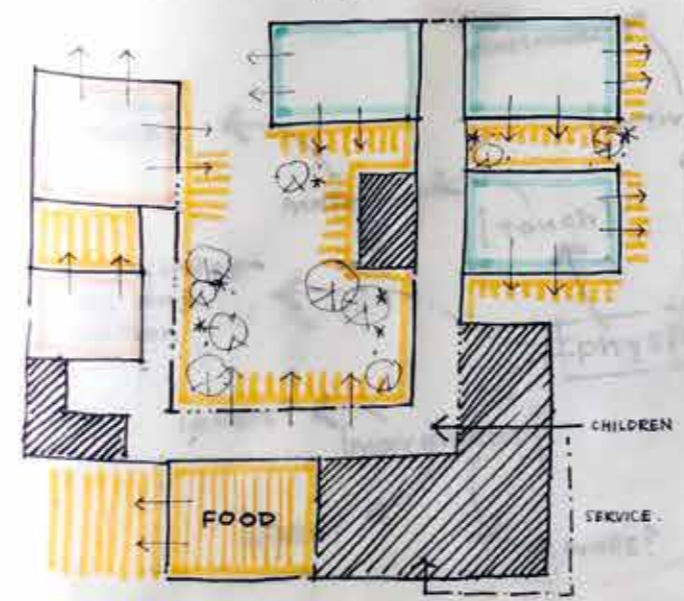
PROBLEM



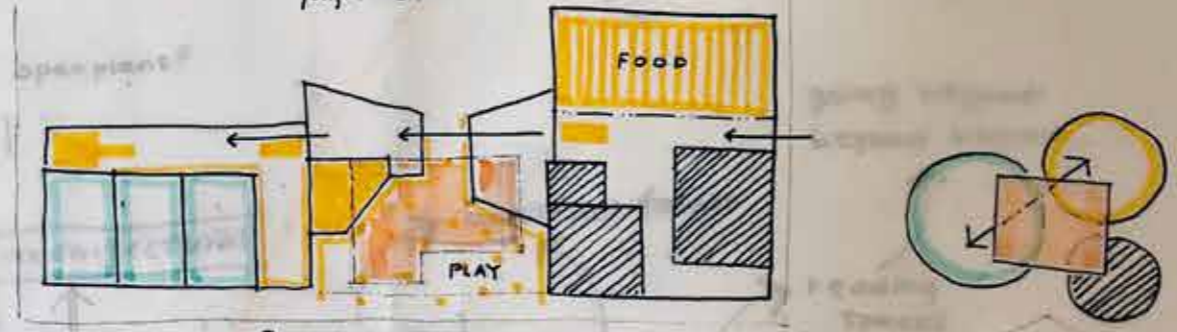
SPATIAL STUDIES

■ PLAY
■ OLDER KIDS
■ YOUNGER KIDS
■ SERVICES

⑤ SMW Nursery / HIBINOSEKKEI + youji no shiro



⑥ AM Kindergarten / HIBINOSEKKEI youji no shiro



"BOUNDLESS / ENLESS LOOP MOVEMENT"

- DIFFERENT VERTICAL CIRCULATIONS
- 10 STAIRS, 3 SLIDES, CLIMBING ROD + ROPES
- CHILDREN GOES UP BY STAIRS THEN DOWN BY SLIDE; UP BY ROPE THEN DOWN BY ROD! REPEAT!
- NO DEAD ENDS.

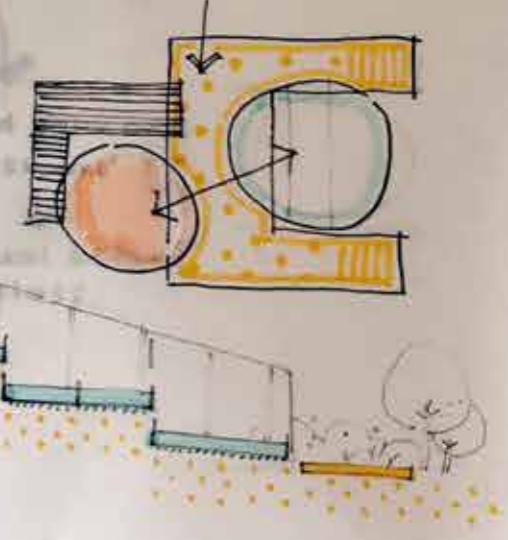
⑦ Hakasui Nursery School / YAMAZAKI KENTARO



HOW TO CREATE A HUGE SPACE FOR CHILDREN TO MINGLE, YET DO NOT DISTURB ACTIVITIES?

"SITS ON A SLOPE"

- USES THE TOPOGRAPHY TO CREATE A HUGE STAIR CONFIGURATION
- USING LEVELS TO DEFINE SPACES.



"GROWTH OF MINDS AND BODIES"

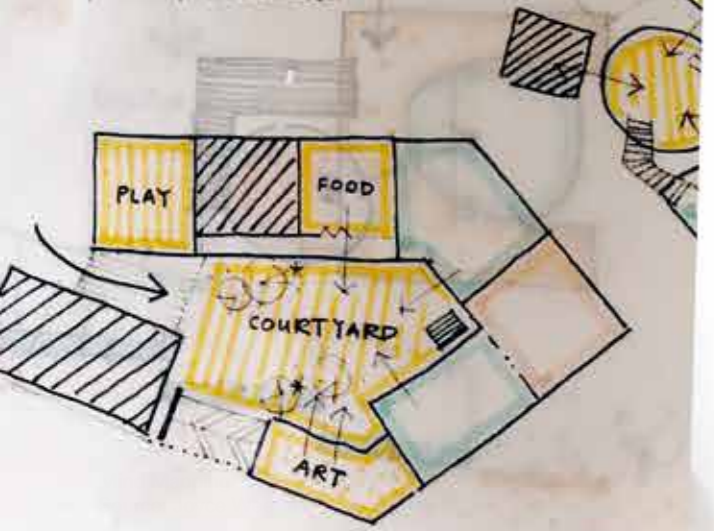
"SURROUNDED BY NATURE"

- COURTYARD AS 'BINDING AGENT.'
- BRINGS NATURE INTO CLASSROOMS.
- SAFE ZONE TO PLAY FREELY.
- IRREGULAR CORRIDOR.
- STIMULATES DIFFERENT MOVEMENT AND ACTIVITIES.

KM Kindergarten + Nursery / HIBINOSEKKEI + youji no shiro

"MOVEMENT IN, ON + AROUND"

- BUILDING SURROUNDS COURTYARD.
- STAIRS CONNECTS SPACES TO COURTYARD.
- SLOPE STIMULATES MOVEMENT.
- spaces opens outwards.



PROBLEMS

Indoor generation
 → 90% Indoor
 not only see but

Missing how beautiful the NATURE is

learning sleep is playing
 → My childhood
 Only memory how much I did that 1 hour every day

ACTIVE → Outdoor activities

→ KG SKIPPING school

LEARNING NATURE

DAYS → 1 hr PERIOD
 ACTIVE PERIOD → WISHING FOR PERIOD
 → FALL SICK FAST
 NO EXCITEMENT
 → PROBLEM SOLVING
 → IQ X NOT ACTIVE
 → EXCURSION SPOT
 → TOWARDS
 → INDOOR OUTDOOR

TO PROVIDE SPACE | ENVIRONMENT

Where the kids LEARN
 VALUE OF NATURE
 PROTECT THE ENVIRONMENT
 IMPORTANCE OF OPENNESS IN THEIR LIFE



EXPLORE AND LEARN THEMSELVES

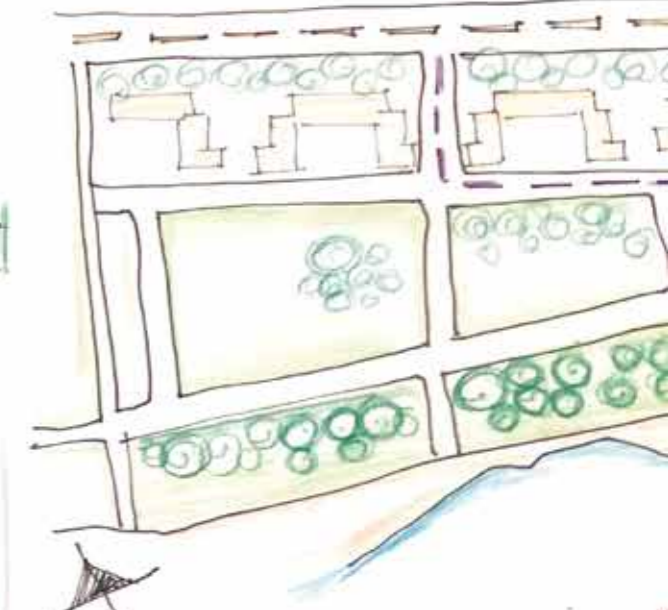
TEACHER → FACILITATOR, BEING GUIDANCE

BW KIDS X NATURE

LEG. GARDENS

LE RISK, SOLVE PROBLEMS, UNDERSTAND WORKS, LEARN

CURRENT SELF CENTRED RESOURCE P...
 eg - oil / wood
 KIDS - NEXT GEN



IMAGINATION THINKING OF A KID IN

INTROVERTS

CLOSED ENVIRONMENT → OPEN

NO

OUTPUT → CREATE THE SPATIAL PER

PHYSICAL INTERACTION WITH HEALTHY OPEN FEAS

LEARNING EXCITEMENT ↑ SOCIAL C INDEPEN PROBLE

NATURE LOVERS

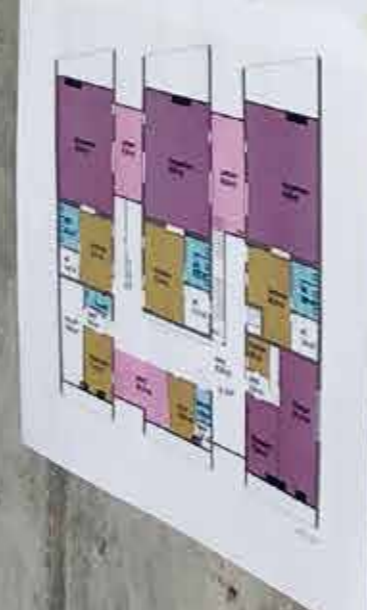
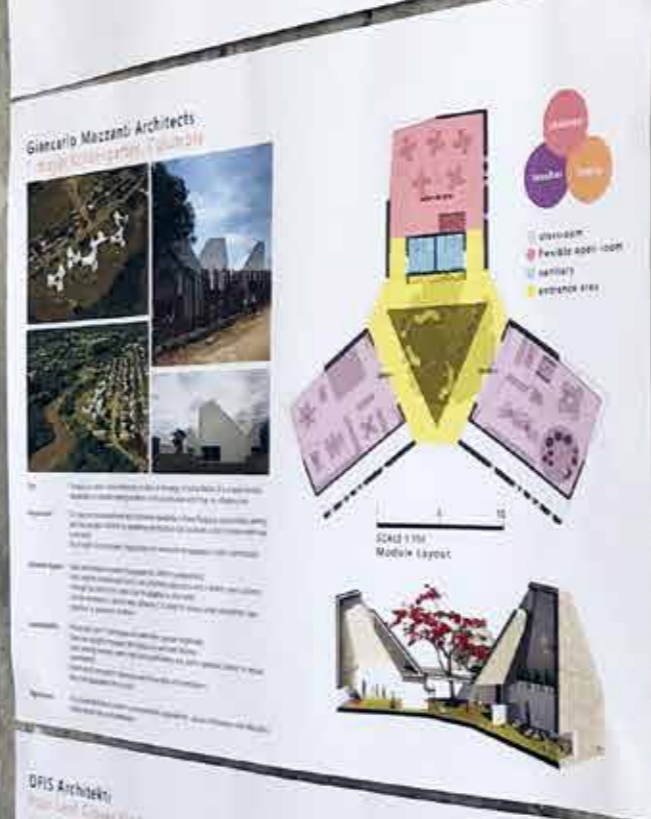
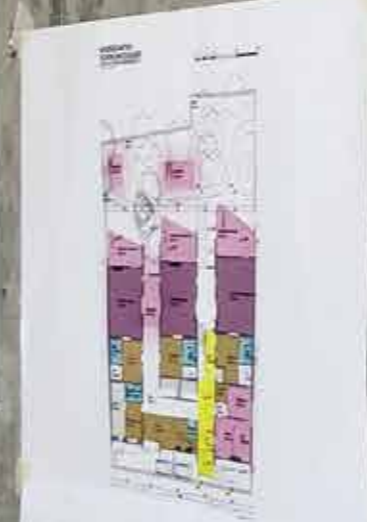
BETTER WORLD

OPEN WALLS

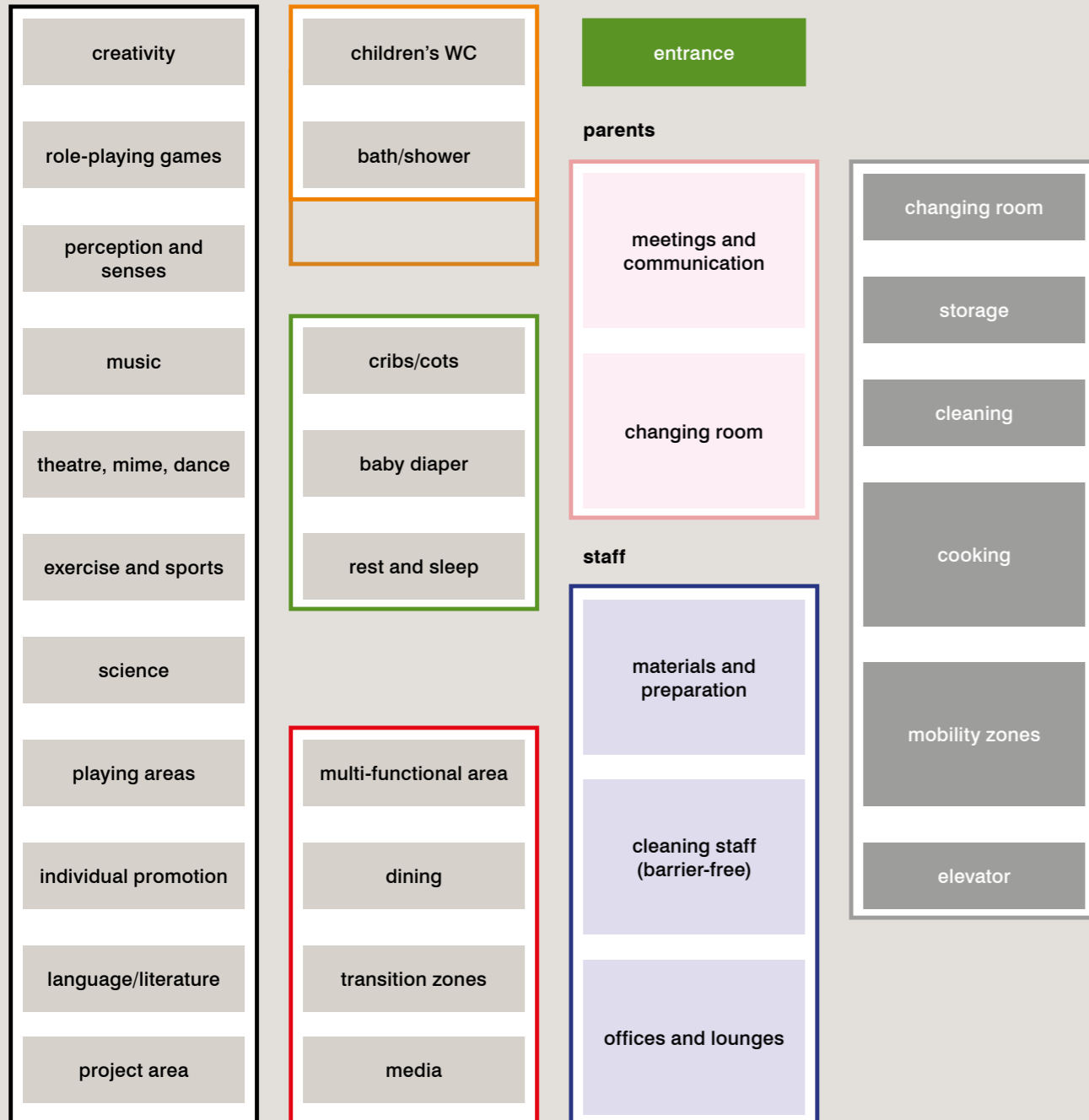
→ DIFFERENCE B/W KID LIVING IN



Research Findings
Photo: Natascha Meuser



Children



Functional Programme An Introduction to Space

Room Programme for 105 Children		sqm per room	total sqm
7	groups (7 to 10 rooms for playing, role play, music, reading etc.) in each case 55 sqm	10 to 40	385
6	sleeping rooms/relaxation areas (sleeping, relaxation, retreat area) in each case 20 sqm	15 to 25	120
1	workshop (arts and creativity), laboratory sink	20	20
1	multipurpose, movement and assembly room (incl. equipment storage room)	60	60
1	entrance area (as marketplace, bistro, meeting place for parents etc.)	design-based	
1	management office	21	21
1	staff and break room (with kitchenette)	40	40
1	workroom with media cabinet (for employees and parent meetings)	15	15
1	preparation kitchen with separate scullery (and storage room with 5 sqm)	35	35
7	storage rooms or several large storerooms (warehouse for educational material)	8	56
1	cleaning, washing and drying room	8	8
1	changing room for housekeeping staff with WC and washbasins	15	15
	Personal WCs and disabled WCs (number according to workplace regulations)	design-based	
2	sanitary areas (total 11 children's WC/11 children's washbasins), shower and 4-5 changing areas for crib children (subdivided)	design-based	
	wardrobes (rooms or niches), corridor, traffic area (without entrance area)	design-based	
1	pram storage room	25	25
1	technical room	design-based	
	Room programme or main usable floor area ca.		800
	*) Design or plan a traffic area in the entrance area as a parent meeting place		
	Rooms for parent meetings and education		
1	coffee area	25	25
1	multipurpose room	50	50
	visitor WC	10	10
1	group room	25	25
			110
			910
	outdoor space (10 sqm per child)		1,000

»The question of space comes after the primary question of ‘what does learning look like for you?’ When you ask this question of carers and learners, you get a sense of their daily routine, and what spaces could accommodate that.«

Takaharu Tezuka

The Basics of the Design
Ten Parameters



The Basics of the Design Ten Parameters

Natascha Meuser

Formulating design parameters for buildings for children is a challenge. Only a few other building typologies offer such a broad spectrum of multi-functional design parameters: serving as a second home, playground, garden, classroom, gymnasium, restaurant, music hall, laboratory, workroom, office, theatre, and much more. What are the outlines of the generally valid aspects for a design and space programme? From the analysis of contemporary buildings and a detailed evaluation of historical buildings from the GDR period, regularities and trends can be discerned, which may be relevant for future designs. Although this ten-part list by no means claims to be complete, by observation

of these parameters the design and planning of a kindergarten can be carried out. The section that follows is intended to serve as a planning aid for the development of a design. It can also be used as a communication platform if all parties involved in planning and construction want to agree on an optimal building concept including architects, specialist planners, pedagogues and educators, building sponsors, and users. Only if the architect from the beginning creates a collaboration with specialist planners for building technology and the surrounding grounds, can a design emerge that successfully reflects the needs of the children, their educators, the parents and visitors, and thereby the kindergarten.



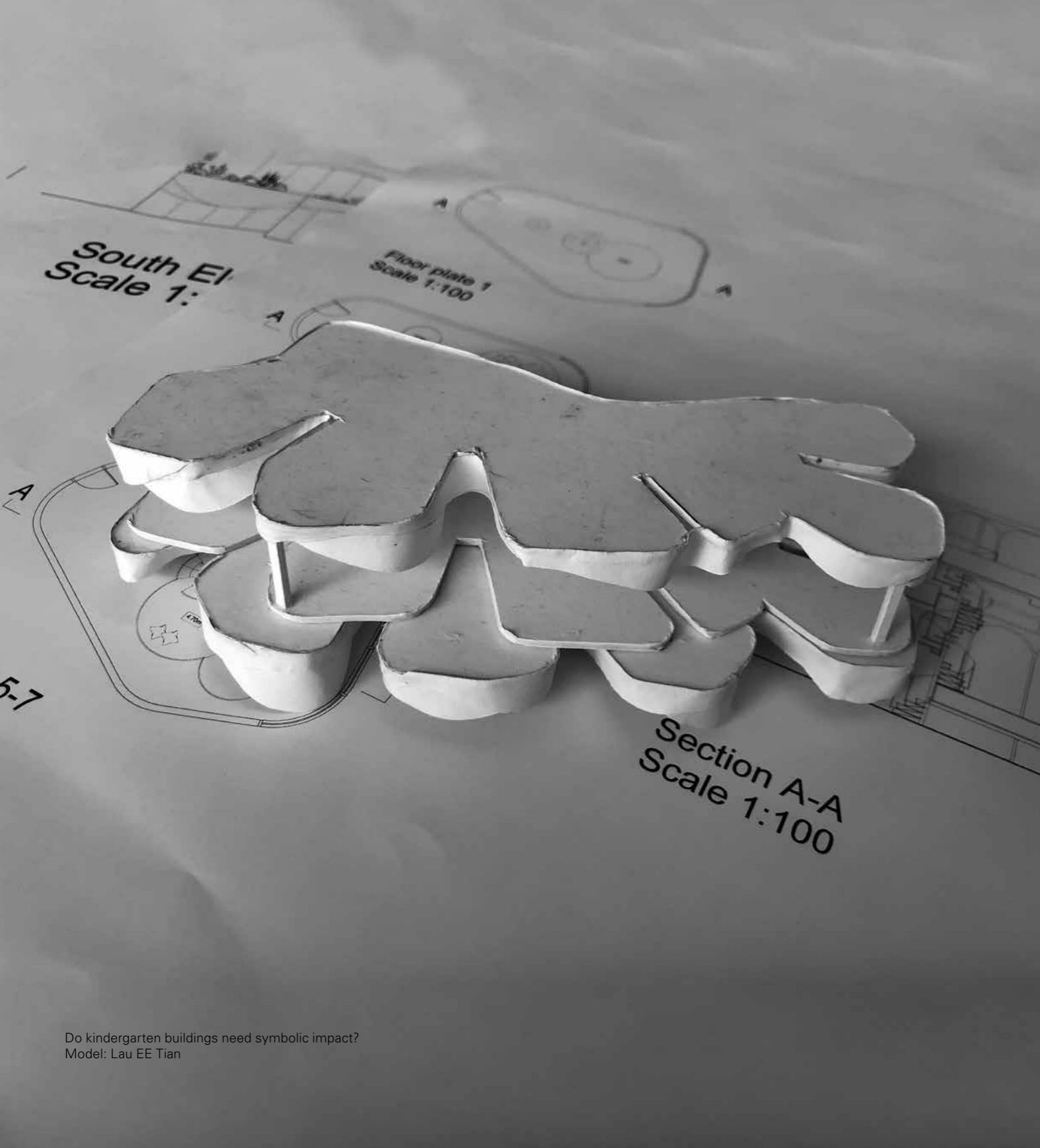
Urban Context

The Urban Context in which the Kindergarten is Located

Location is important. Two opposing aspects emerge in the urban context: on the one hand, the institution of the kindergarten is dependent on an inner city or a proximate urban/suburban location in order to guarantee accessibility for visitors. On the other hand, a densely settled urban location may limit the kindergarten's expansion possibilities or size of outdoor facilities. The Kindergarten Seewinkel is located in Erkner a suburban town in the north-eastern part of Berlin. Erkner is a border region, a territory which is defined by its location next to Poland, visual expressed through architecture. The site location is dominated by its topography and location nearby a lake. The design task is to thoughtfully design a building that would integrate with its environment as well as being an integral part of the landscape. The scale relates to the surrounding development, and also takes the perspective of the children into account. Therefore, this new kindergarten building acts as a mediator between these worlds, starting from the context but transcending it.



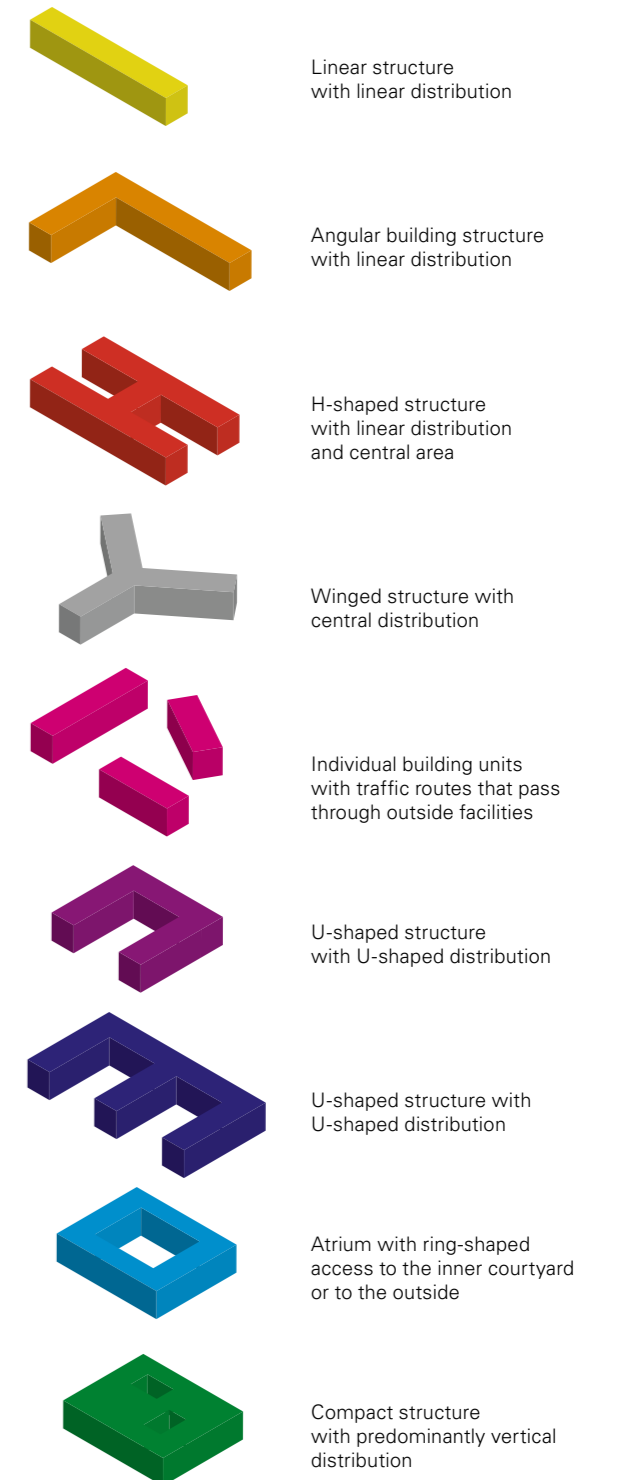
Site analysis at Seewinkel, Erkner
Photo: Natascha Meuser



Do kindergarten buildings need symbolic impact?
Model: Lau EE Tian

Building Shape How the Building Presents itself Architecturally

The list of design parameters for kindergarten buildings would be incomplete without addressing the architecture as a point of identification. The idea that striking buildings contribute to the image of a kindergarten may seem far-fetched at first. But a closer look will show that kindergartens do not need symbolic impact. It is more or less an interior design world, although kindergartens successfully use architecture for their public and marketing image. Architecture is also used for identifying reasons. Children will recognise the building as their new home. This underscores the value that outside parties attach to the kindergarten as an institution and its architectural impact. Contemporary kindergartens are differentiated from each other by the programmes they offer (art, music, nature e.g.), or simply by the increase in attraction in the form of unusual buildings. Since the majority of planning contracts today are issued through public competitions, the increased quality of the buildings and the heightened public awareness of architecture also have an effect on kindergartens. This new focus can only contribute greatly to their general benefit.





Fabrics and colors play a crucial role.
Photo: Natascha Meuser

Interior Design

What is the Role of Interior Design in Educational Settings?

Buildings designed for children must epitomise safety, security and comfort. It is only in a very few typologies that these tenets will be taken more literally. To this end an abundance of individual factors have to be borne in mind which ultimately play an important role in the development of the children, the manageability of the areas involved and the occupants' sense of being at ease with their surroundings too. Practically all structural factors – such as acoustics, temperature, ventilation and aspects of shape – are therefore significant for the design of communal and/or recreational areas, with particular regard to the following:

Architecture must respond to the needs and abilities of children under the age of three in terms of sensory and physical motor skills as well as those of older children. There must be adequate space within rooms for quiet areas, places which encourage movement, learning spaces and play areas which meet the following general planning requirements of 2.5 to 4.5 m² (requirements may vary per location depending on the individual German state involved). A ceiling height of at least 2.5 m is required as well as natural light, dimmable lighting to lend a homely atmosphere and functional lighting. Swivel windows and tilting windows made of safety glass (up to a height of 2.0 m) and doors

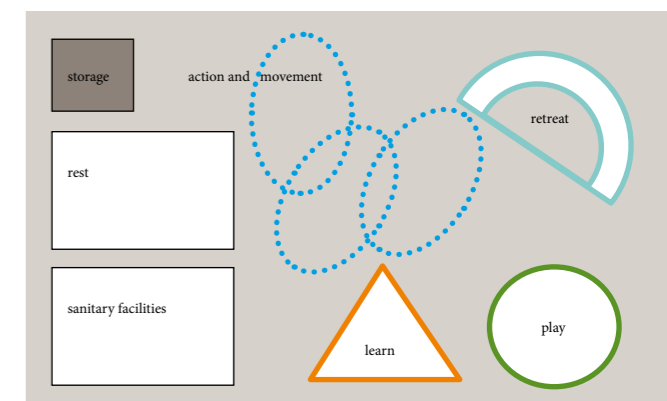
with glass panels and exterior sunscreens are just as much a part of the minimum criteria for fitting out premises as are acoustic measures, in-house accident-prevention technical installations and the provision of sleeping facilities. Fully enclosed rooms are not permitted. Varied floor levels are supposed to act as a stimulant for children when playing, with an entrance at ground level leading directly out on to the outdoor area. Hygiene and safety-related factors together with ergonomics also play a significant role in planning design. Anti-skid and easy-to-clean surfaces are just as important as sufficient heat and ventilation.

- *The Design of Spaces:* consider materials, colours, and light
- *The Perception of Spaces:* consider perspective and mood
- *The Creation of Spaces:* consider the body of and floors within a building
- *The Structure of Spaces:* consider form and order
- *The Sequence of Spaces:* consider location and layout of passageways
- *The Ambience of Spaces:* consider special touches and their desired effects
- *The Dimensions of Spaces:* consider proportion and scale



Staging Space How Children Feel and See the World

Even in their chosen discipline, architects have no claim to design freedom. An architect designs a kindergarten for grown-ups and small humans at the same time. What is pleasant for a visitor may be very harmful for a child. Some trends can be observed in newer kindergarten buildings: in addition to common class rooms, there are often spatial sequences with surprise effects. For instance active zones and rest areas must be coordinated with each other. Architecturally staged levels and views can serve to enhance this enjoyment of space, from vantage points; from above, a level perspective, or below. By means of a hole in the floor or wall, the design elements can also provide a different view and experience for the children, for example with the aid of a display window. The exploration of space also depends on the layout of the pathways. While the children activities occur most of the daytime indoor, the outdoor territory is as important to them. Nature provides a modicum of freedom and a certain autonomy. Do children actually move differently in nature than in an architecturally designed space?



The architecture must respond to the needs and abilities of the respective age groups in the form of differentiated spatial offers and functions.



Little Humans How to Design for Children

»Seen as an innocent figure, the child represented hope in a better future, for today's children would be tomorrow's society. This change of attitude toward childhood will therefore be evident in both practical and theoretical forms of architecture and urban planning, ranging from the large scale of the city, to the intimate scale of domestic space. Spaces for play, such as playgrounds and playrooms; the walking distance at which a school is placed from home and, inside the dwelling, spaces for social interaction and introspection – these all consist of evidence of how childhood started integrating the discourse of modern society and, thus, of architecture. By looking into the work of architects from this period – like Ernst May's *Siedlungen* in Frankfurt, Ernö Goldfinger and his exhibitions, Aldo Van Eyck and his playgrounds in Amsterdam, to name a few, one can unveil the various interpretations of childhood in architecture, never forgetting that the architect who thinks the city also designs the home, the latter being regarded as the very centre of town planning concerns and the focal point of all measures.«
by Rita Monteiro Vieira

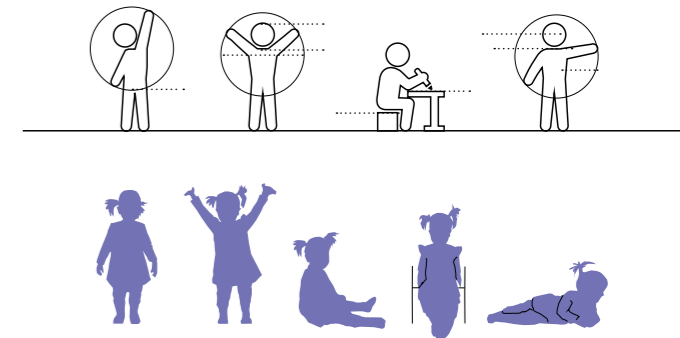
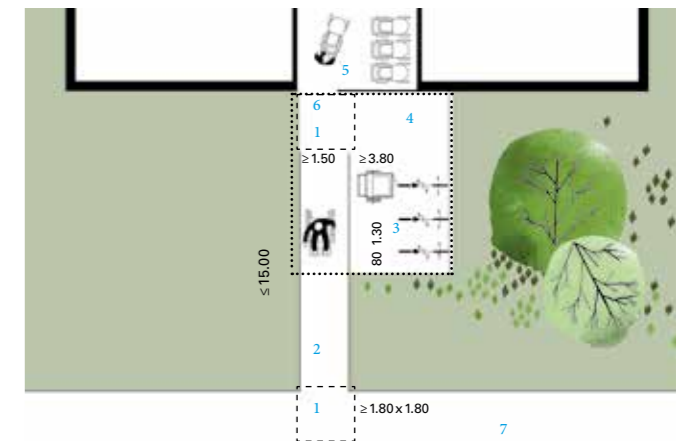




Photo: FRÖBEL

Entrance Area How to Design a Welcoming Distribution Area

Arrival and departure, or entering and leaving, are particularly marked by the overcoming of boundaries and conflicting environments. Upon entering a building the entranceway is a key element – it acts as the first visible welcoming gesture whilst at the same time being a layer of security that visitors must face. Admission checks are carried out by means of a doorbell, intercom or doorman. Following initial entry the next threshold to be negotiated entails getting one's bearings, exchanging greetings, checking in at reception and handing in coats etc at the cloakroom. It is here that the ritual gestures of saying hello or goodbye to children begin, as well as various communications among the children, the people in charge, and parents. Architectural elements, such as doors, porches, balustrades, ramps, plants, and lighting are intended to illustrate from afar the important role of the entrance within the framework of the entire façade, and they should be designed to be both safe and accessible. The provision of information and announcements as well as the presentation of educational work rank among the fundamental tasks of the entrance area in the course of daily encounters.



- 1 Wheelchair movement area: 1.80 x 1.80 m
- 2 Width of walkway: 1.50 m width to 15 m length; shunting area 1.80 x 1.80 m
1.20 m width to 6 m in length, without changing direction; shunting area 1.50 x 1.50 m
- 3 Bicycle parking spaces with trailer: width ≥ 3.80 m
Distance between bicycle stands ≥ 1.30 m
- 4 Roofing
- 5 Pram parking area
- 6 The entrance door should have contrasting elements or have visually detectable frames.
- 7 Pathway



Photo: Natascha Meuser

Safety and Security How to Protect Children

Safety management is without a doubt one of the most complex tasks of a kindergarten. This starts out from the usual building code requirements (fire prevention, for example) and extends to special regulations as well as evacuation and escape procedures for the entire facility. When we speak of material security in kindergartens architectural elements such as banister rails, doors and furnishings have all to be taken into equal consideration. This is closely bound with preventing accidents, by responding to the physical dimensions of children. Furthermore, steps must be taken to ensure that there are access control systems for entrances and exits to given areas as well as primarily to the building itself. Open doors as we know them from our own childhood have long since disappeared from kindergartens. Different educational approaches also call for appropriate spatial layouts. Differing requirements in terms of security are placed on forest kindergartens than, for example, on inner-city kindergartens. Just as spatial and functional programmes differ, so too must planners' responses differ accordingly.



Photo: Istock

Acoustics Standards The Impact Acoustics Have on How Children Learn

The fact that nursery groups are noisy is a given – yet stress among skilled employees and children, experienced through noise, is proportionately influenced by acoustics. It is only when acoustic aspects are considered from the outset that these can then be tweaked and can be seen as a pertinent component of integral and detailed planning and design, particularly because they are set within the context of structural, physical, architectural, and organisational aspects. New educational concepts envisaging multi-functional rooms must therefore be seen to operate well within buildings and also from the point of view of the physical design of buildings. Above all, measures taken in respect of interior fittings can help to lend a good acoustic ambience – e.g. by avoiding reverberating hard surfaces and furnishings. Soft furnishings and drapery can also help to absorb a great deal of noise emissions. These measures pursue the objective of channelling away the reflection of sounds and preventing, containing or improving the effects of the propagation of noise generally.



Photo: Istock

Signage and Didactics How Information Reaches its Addressees

Similar to information systems, these measures can also reach addressees. A good control system comes with few or even no signs. In the latter, the architecture must speak very graphically for itself. The realisation that signage – the conception and design of guidance and orientation systems – is an independent design task, is increasingly gaining acceptance with kindergarten administrations. For the designing architect, this means involving a specialist at an early stage. Important in the conception and design is the sequence of departure, guidance, and destination points, all of which exist in the complex development system of a kindergarten. Signage should, if possible, be consistent with the didactic concept and branding of the kindergarten itself. This offers an opportunity to develop a barrier-free visitor guidance system alongside a modern didactic method aimed at a public effective overall concept. In a further step, the different information media can be defined editorially and creatively. It is advisable not to forego analogue information, as digital media must be maintained and updated constantly. In addition to the conventional information panel on the origin and characteristics of each child age, didactic display boards are very popular (for example for identifying the different activity or sanitary rooms). However, the same principle applies to both didactics and signage: less is more!



Guidance system
Kids Docs dental practice, Berlin
Design: 3 für Formgebung,
Stefanie Jotzo-Neuenhuys, Britta Weisser

Open Space
How space and activities can
interact in a flexible way



PROJECTS

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Undefined Space Sparks
Simple Imaginative Play
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Universal Design for
Deaf and Hearing Children
Eicy Babb



Boundless Kindergarten Undefined Space Sparks Simple Imaginative Play

Joyce Yi Qin Wee



Redefining Boundaries

Boundless: physically and mentally. By using architectural elements such as different levels, flexible shelves and punctured panels, my design has redefined the definition of walls. They are stripped of their rigidity to provide endless possibilities for the kids to experience the space. Kids have the ability to redefine their own classrooms every day.

Simple Geometry

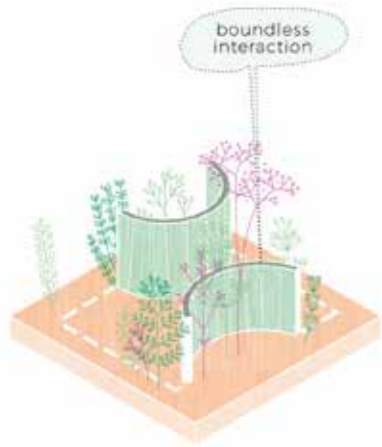
Geometry is one element that gives aesthetic value to my design. This principle will define the result of the architectural form of the kindergarten. Simple geometries are put together to bring nature into the interior spaces. Huge circles direct focus towards the space, and blurring boundaries promotes outdoor activities.

Loop of Movement

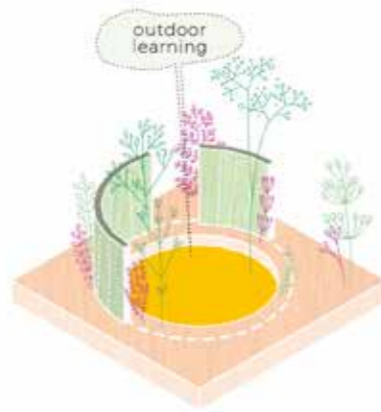
The circulation of the building flows seamlessly and indefinitely. Vertical circulation involving stairs and slides invites the kids to move around in an infinite loop between floors. They can explore different paths, views and areas. Boundlessness strengthens the connection between spaces and sparks interaction amongst the kids.



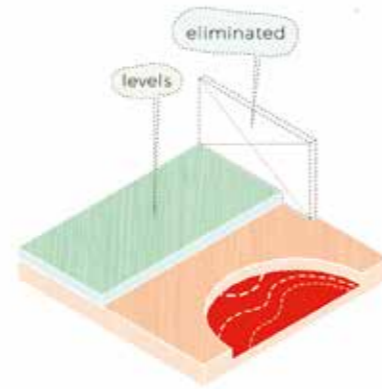
Programmatic Responses



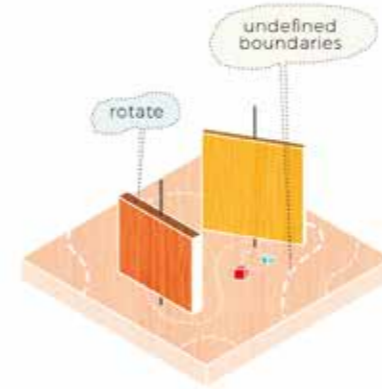
central entrance
breaks up long site



bring the classroom
out of bounds



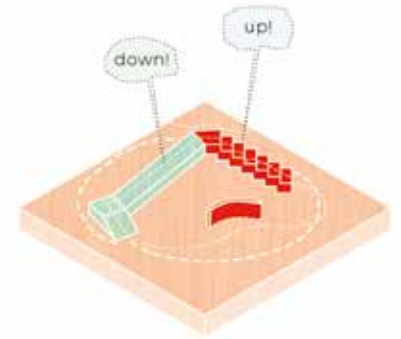
central entrance
breaks up long site



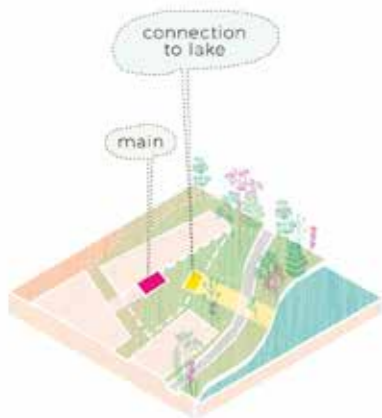
shelves replace walls,
floor pattern hints at bounds



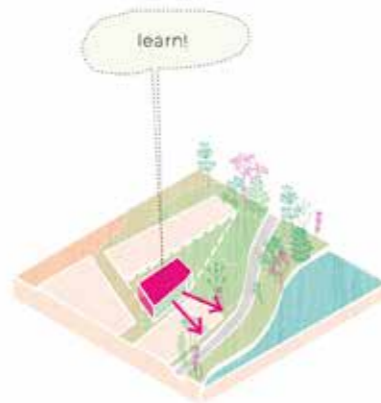
simple geometry sparks
imagination



loop of
movement



central entrance
breaks up long site



group rooms at
sunny southwest



reading space tucked
into a quiet corner



common interstitial space
for group activities

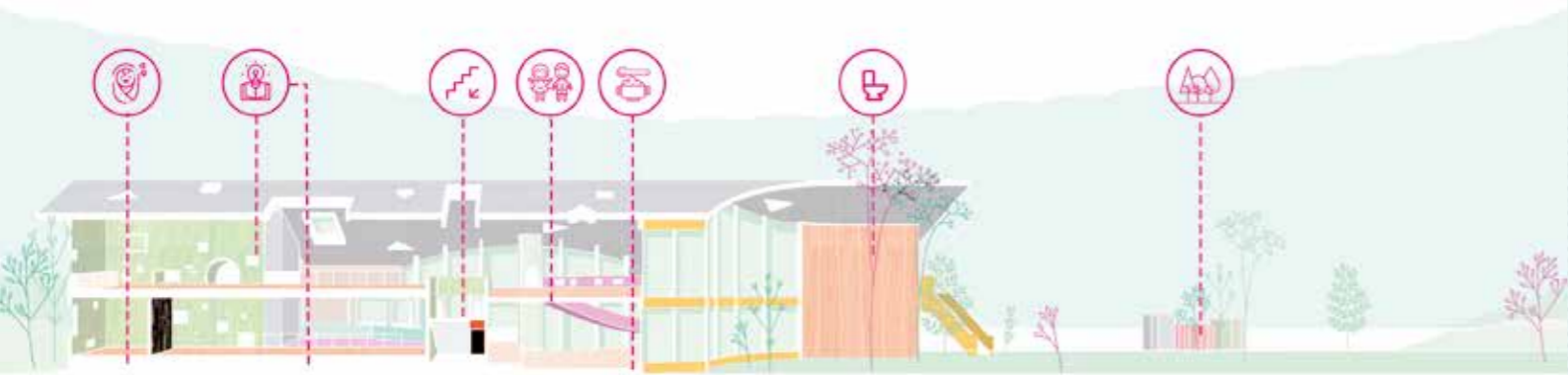


outdoor activities and
learning space

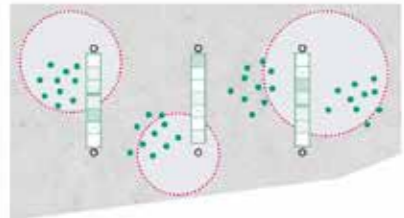


services at
both ends

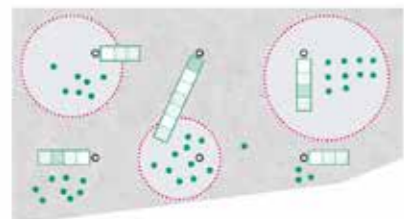
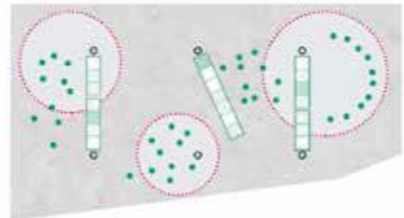
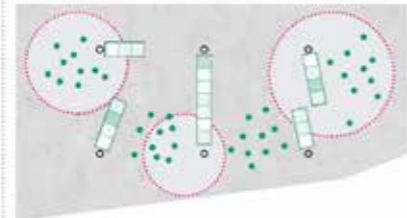




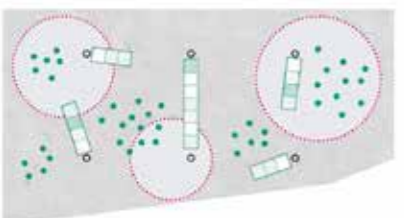
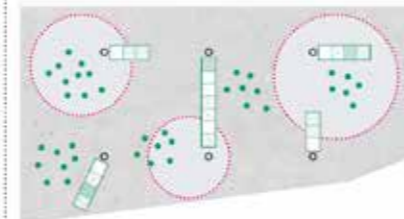
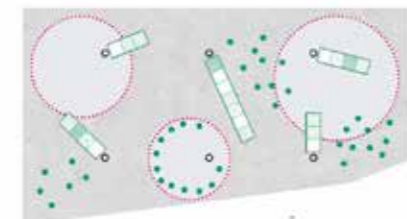
Section B-B
scale 1:100



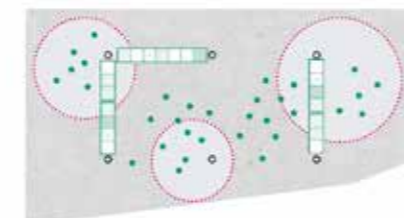
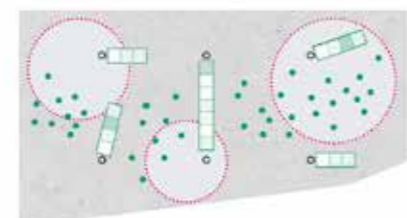
standard



4-space configurations



small groups



events/exhibitions



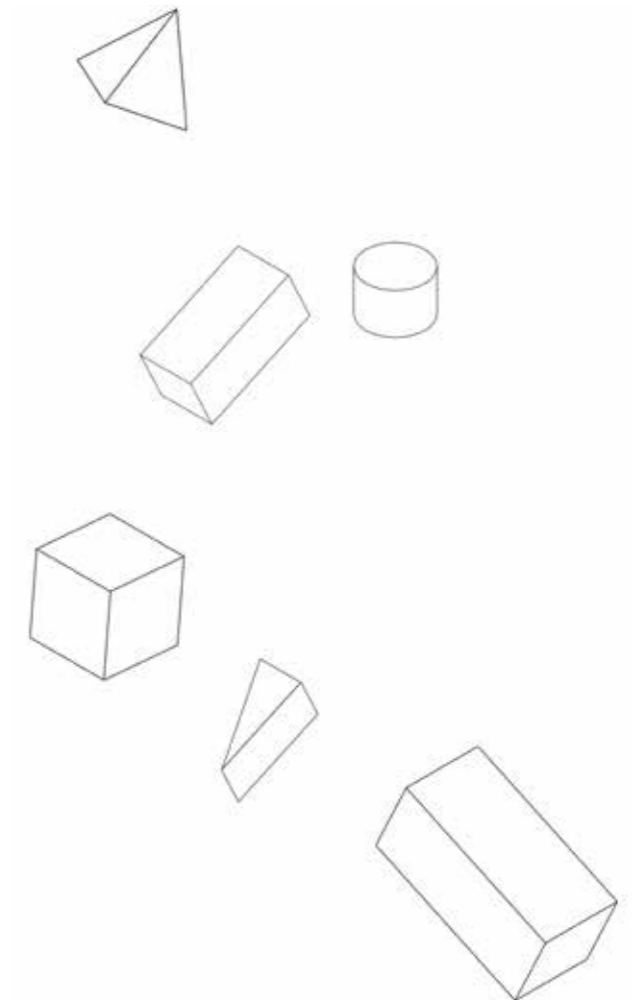


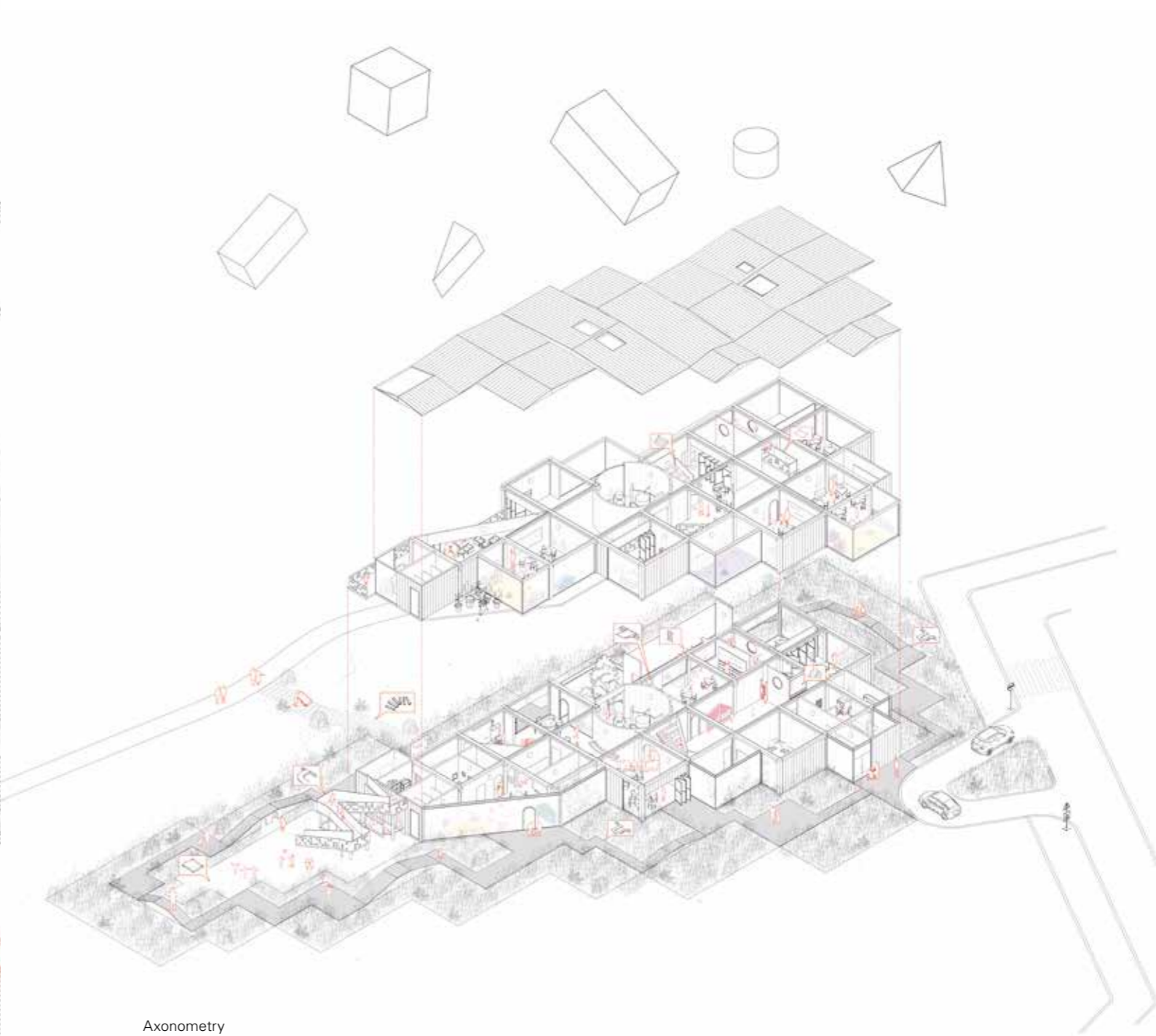
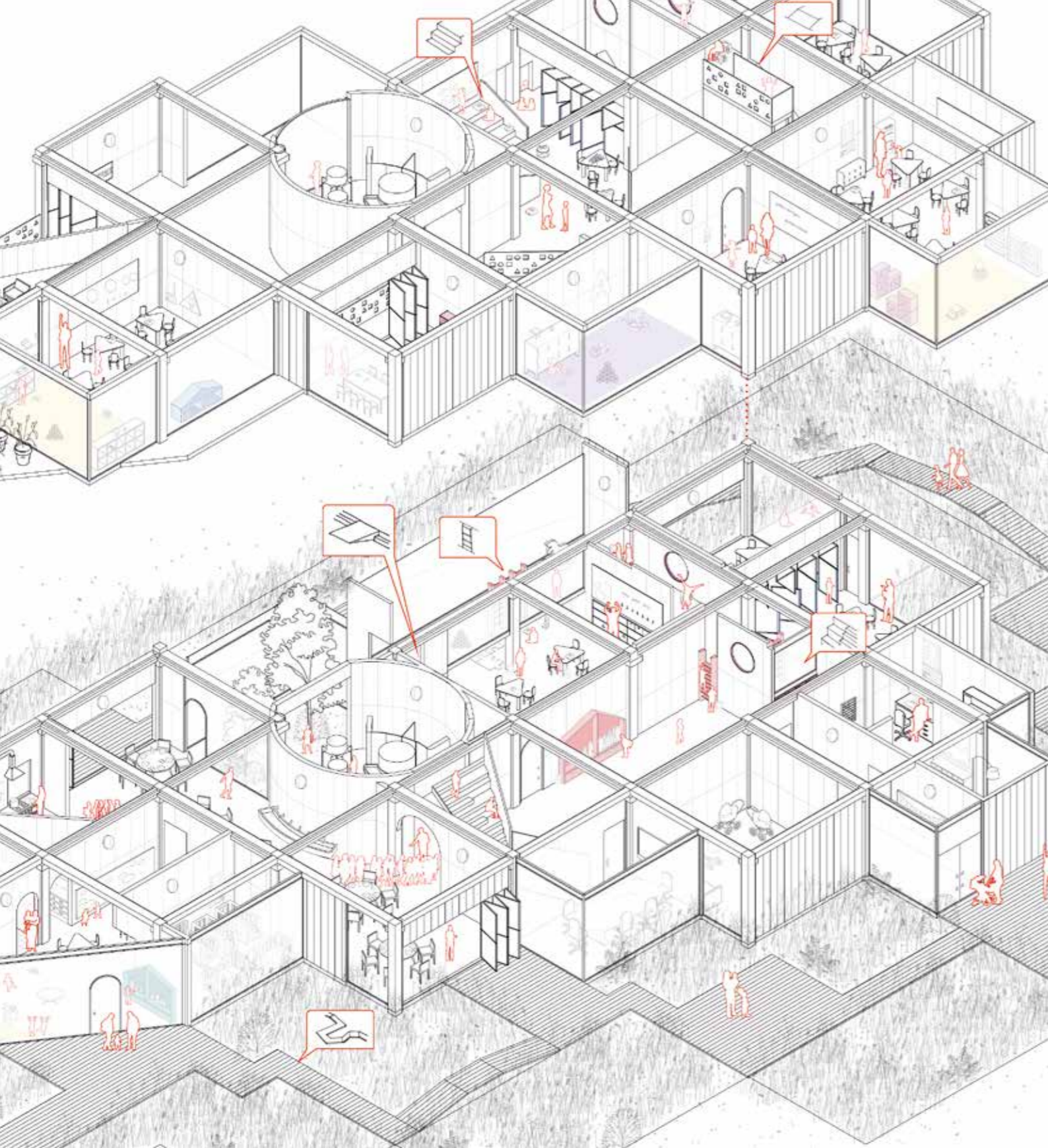
Space Blocks How to Create Internal Spaces

Yan Mai Chun

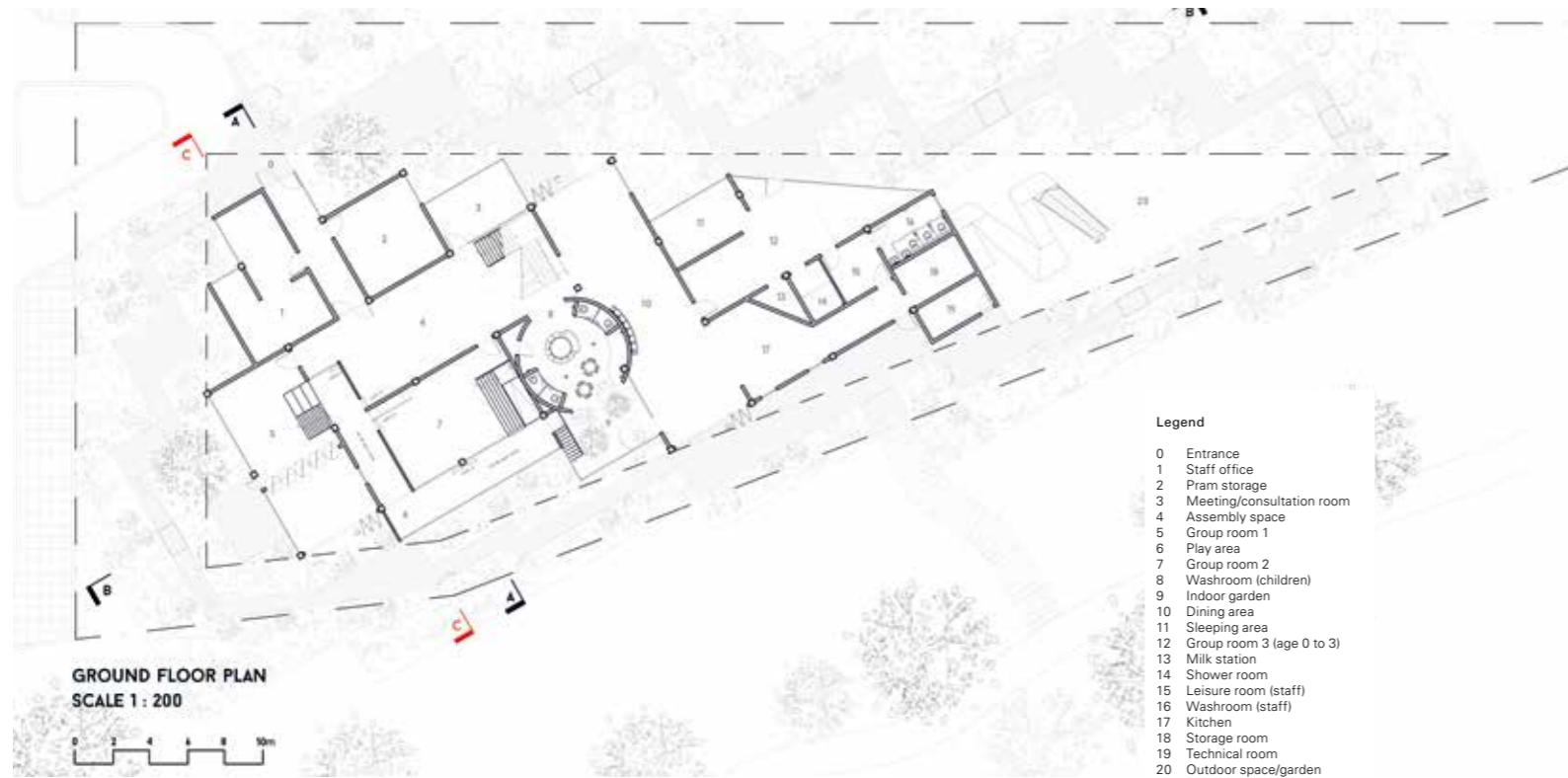


Learning is part of the journey of life. Kindergarten is one of the places that most of us started to learn and gain life experience outside our homes. We were given a design task to create a kindergarten in a peaceful neighbourhood in Erkner, Berlin. Three design parameters were discussed and integrated into the kindergarten design. The first consideration was the visual connection or passive contact that children have with each other, and the neighbours. The arrangement of corridors, the transition spaces and the children's circulation path were all crucial considerations when planning the space. For the task, the planning of space was affected by the shapes and forms that were chosen. Children are visual learners. One of the advantages of the design is that children will have a better understanding of 2D and 3D structures. A space cleaning activity was suggested in order to allow children to develop a sense of depth in relation to their living environment. Playscape elements were replaced with simple elements such as ladders, ramps, steps, etc, so as to contribute a new play experience for the children, within the building and outdoor spaces.

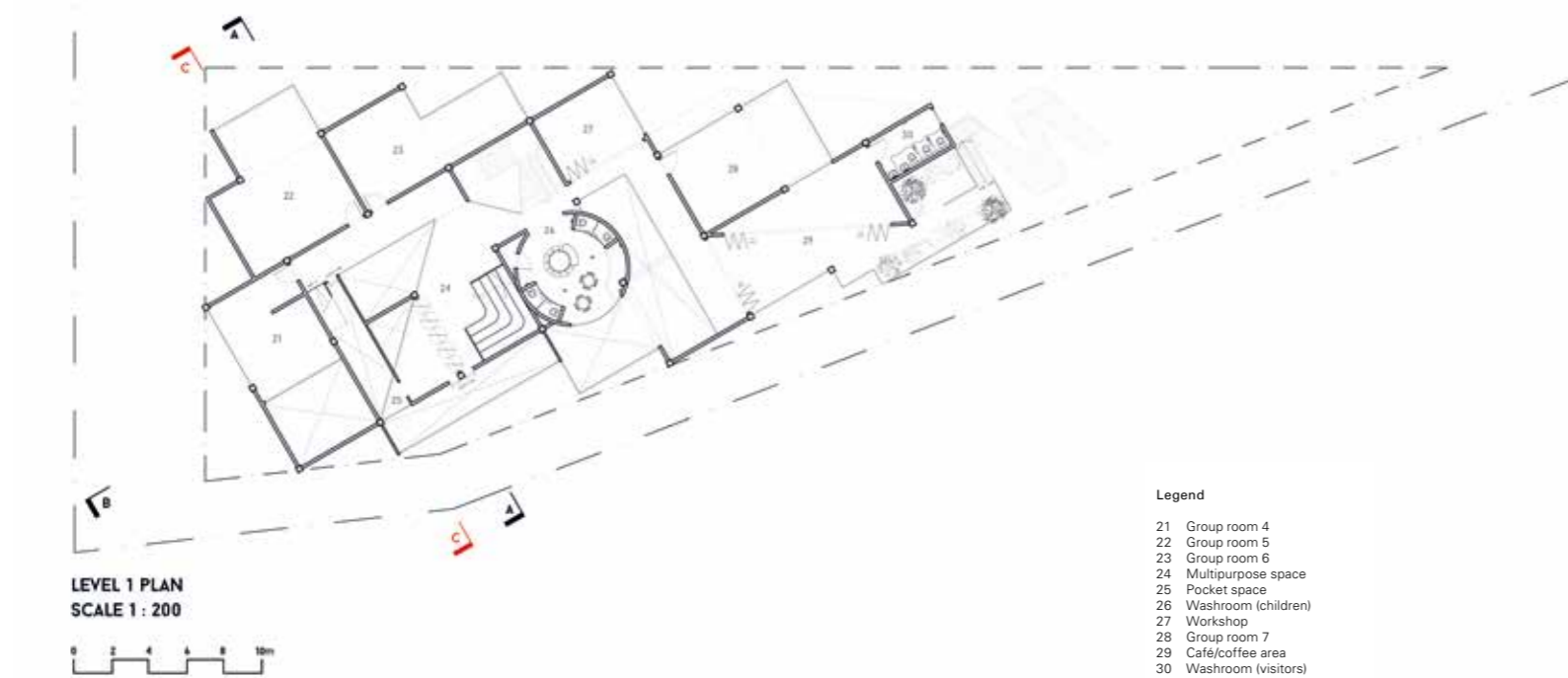


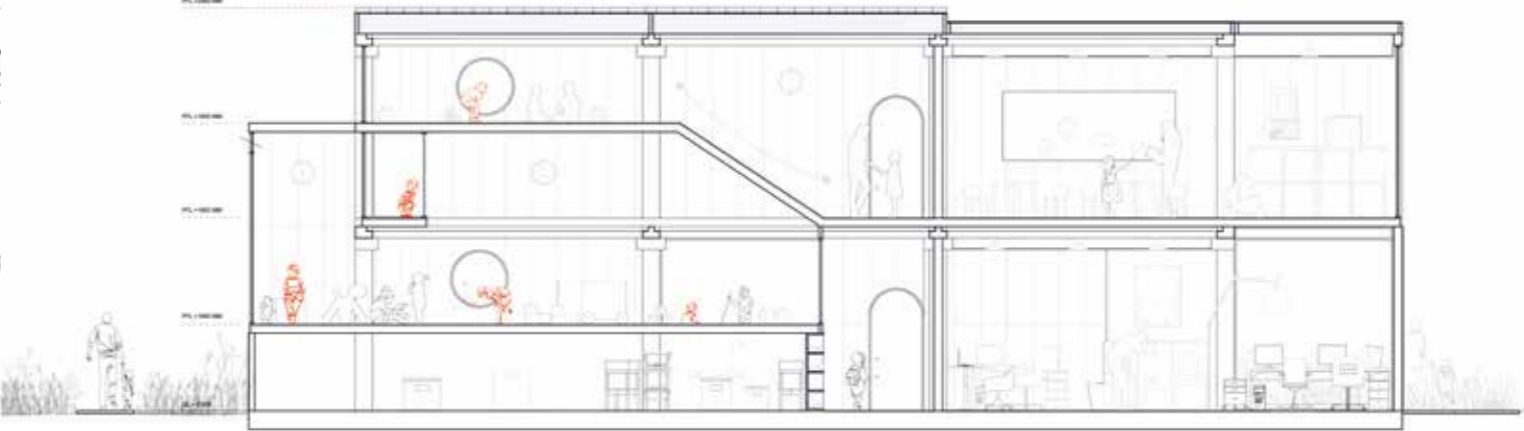
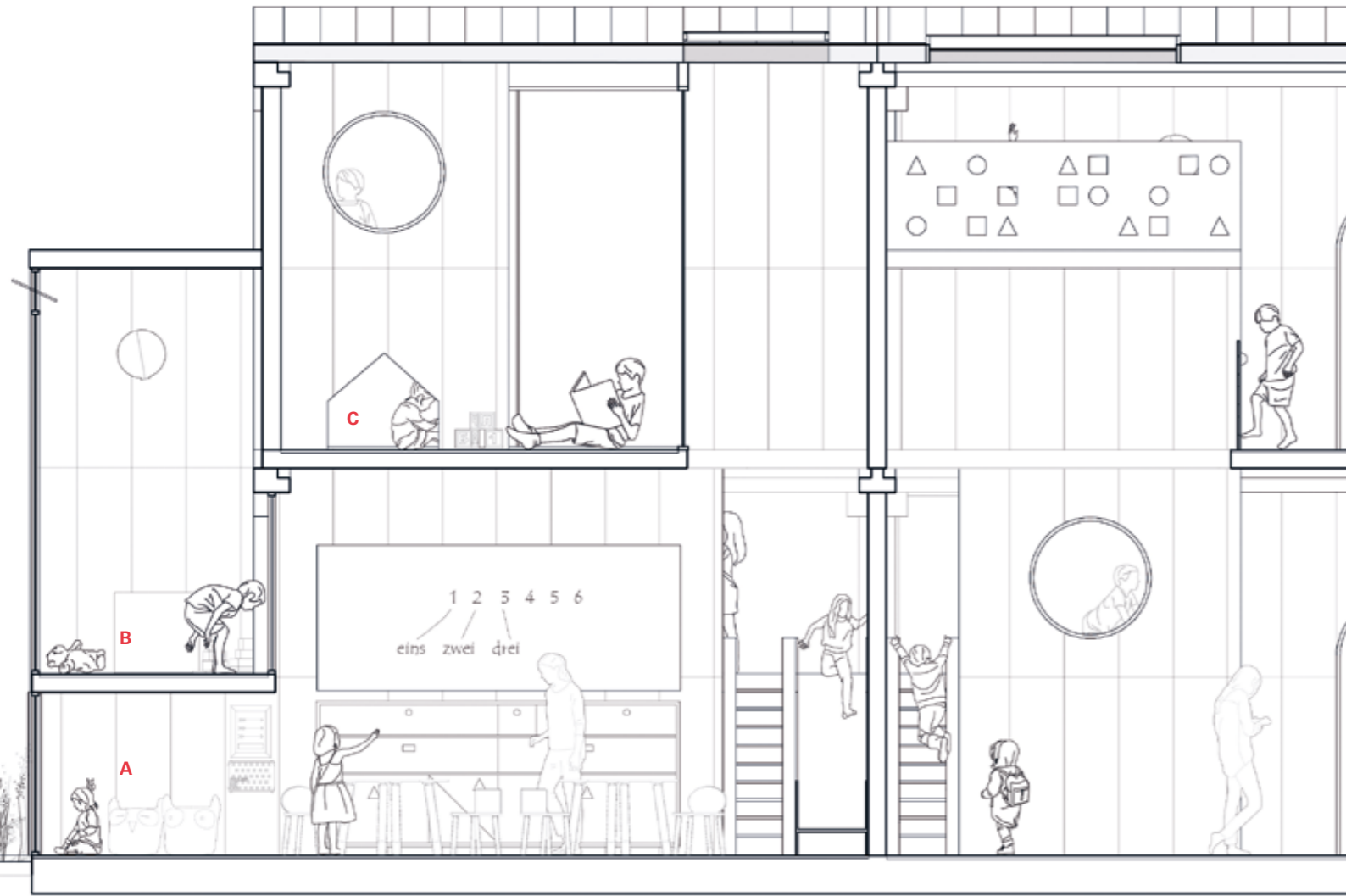


Axonometry

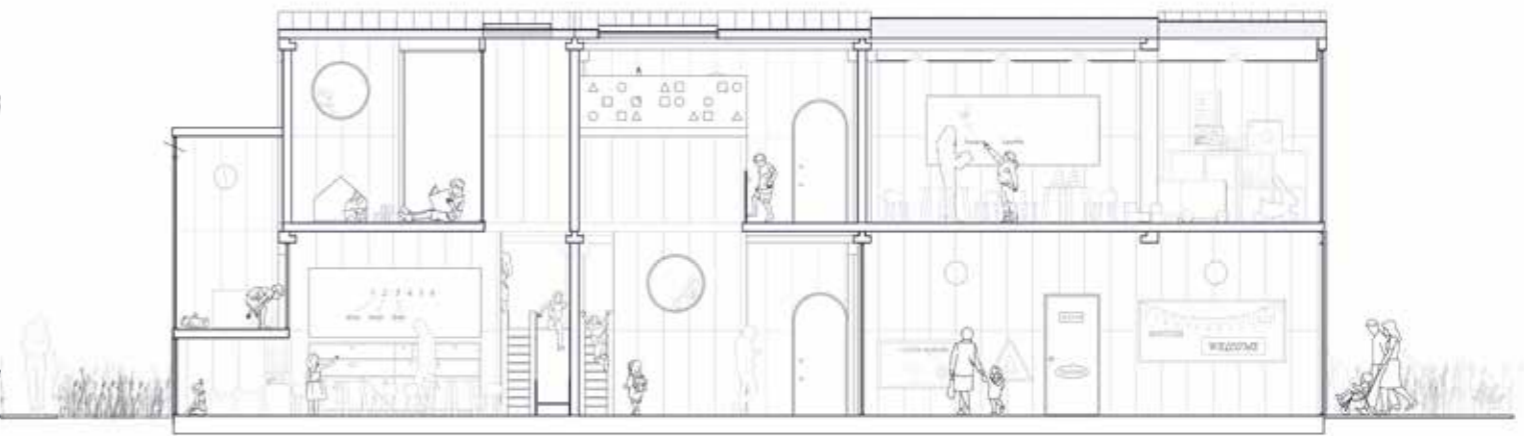


Entrance area

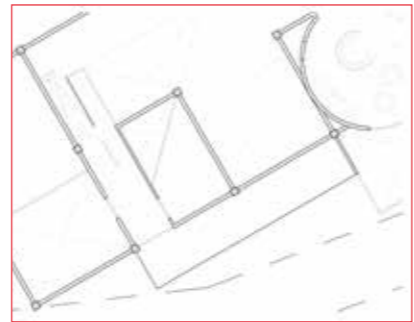
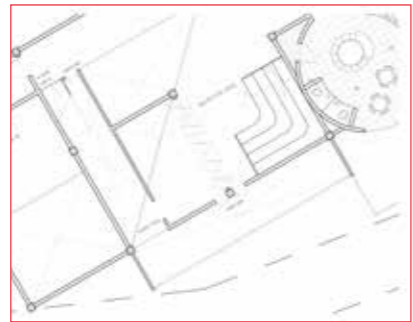
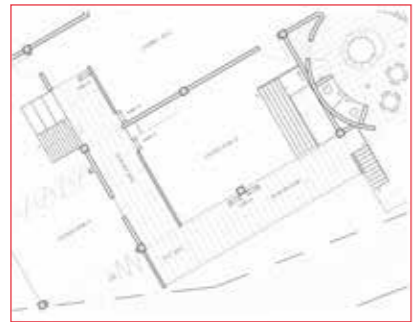




SECTION C - C
SCALE 1 : 50



SECTION A - A
SCALE 1 : 50

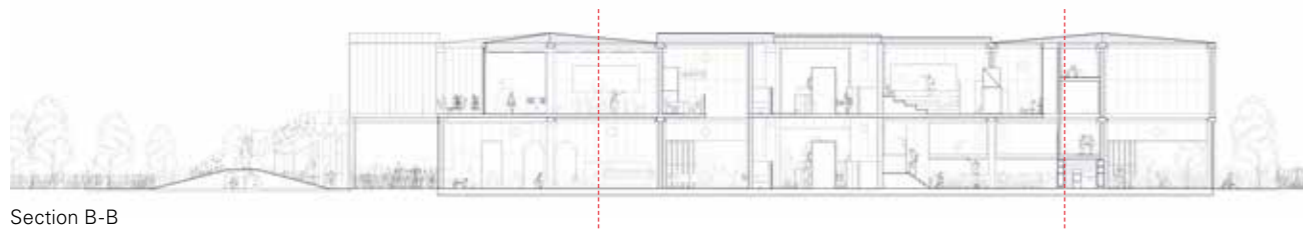


Play Areas
 1 Ground level A
 2 Level B
 3 Level C

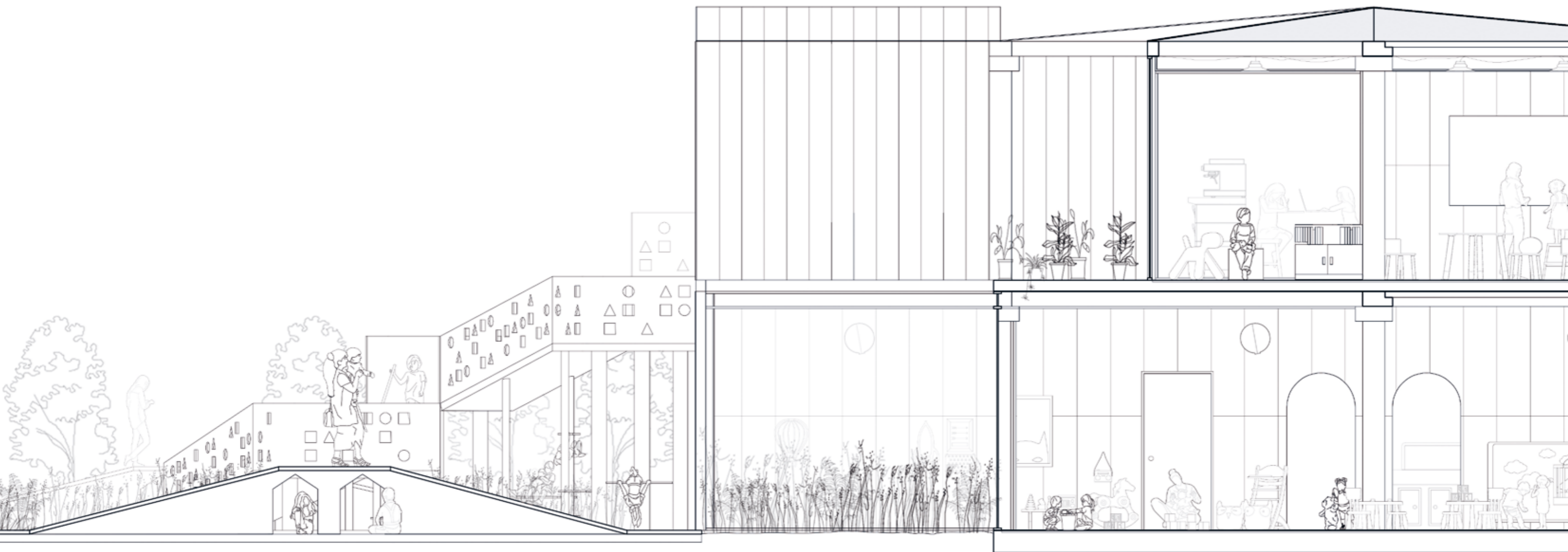
A

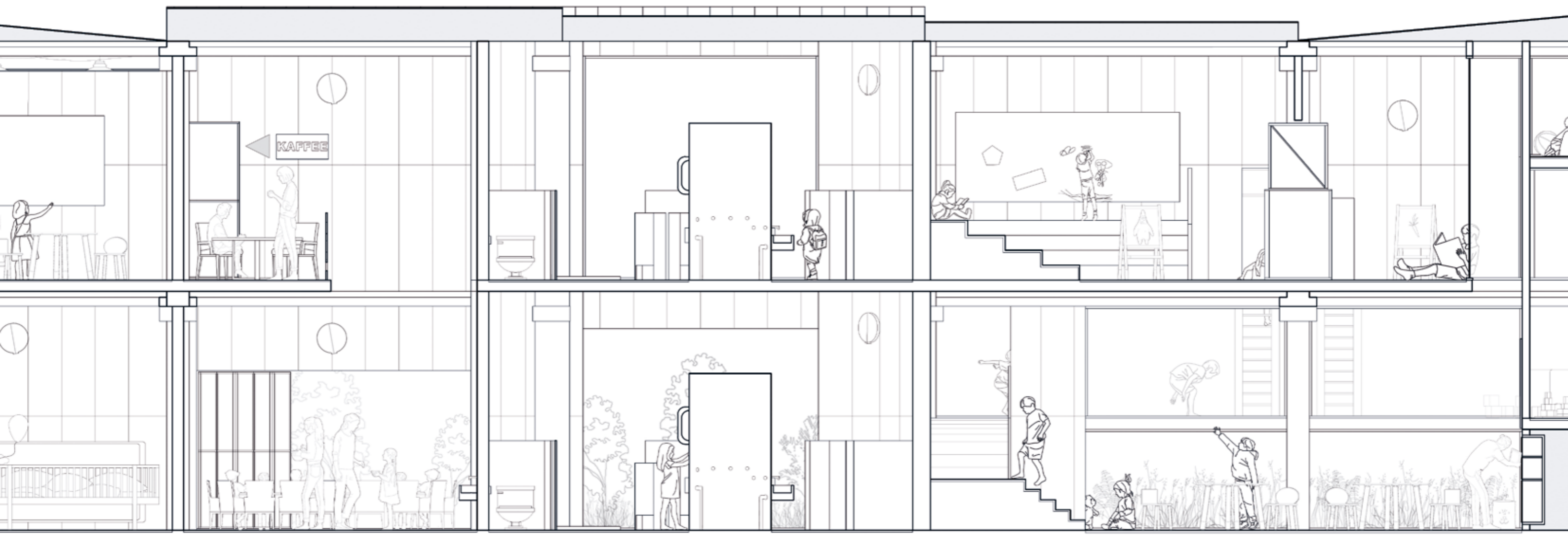
B

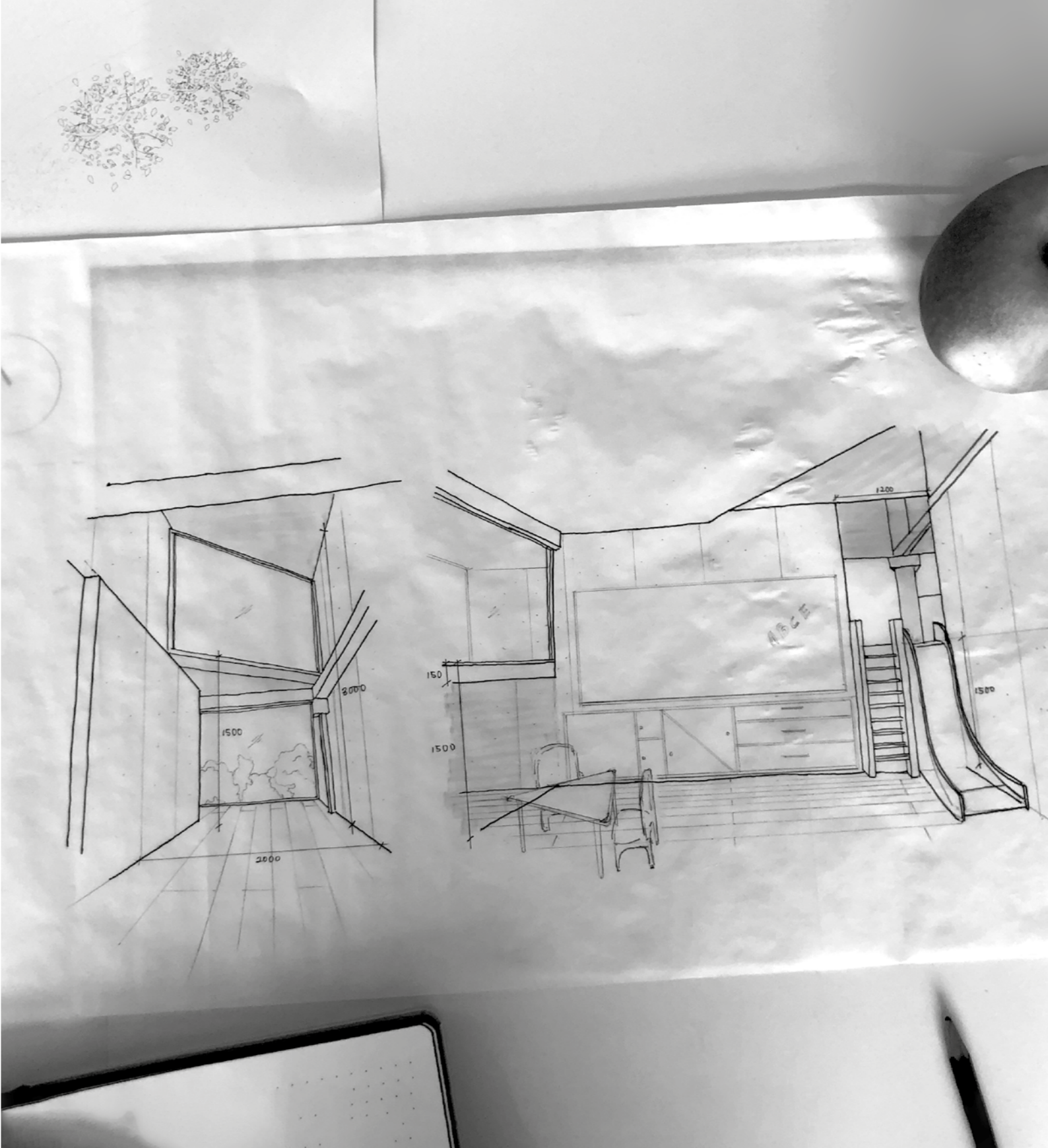
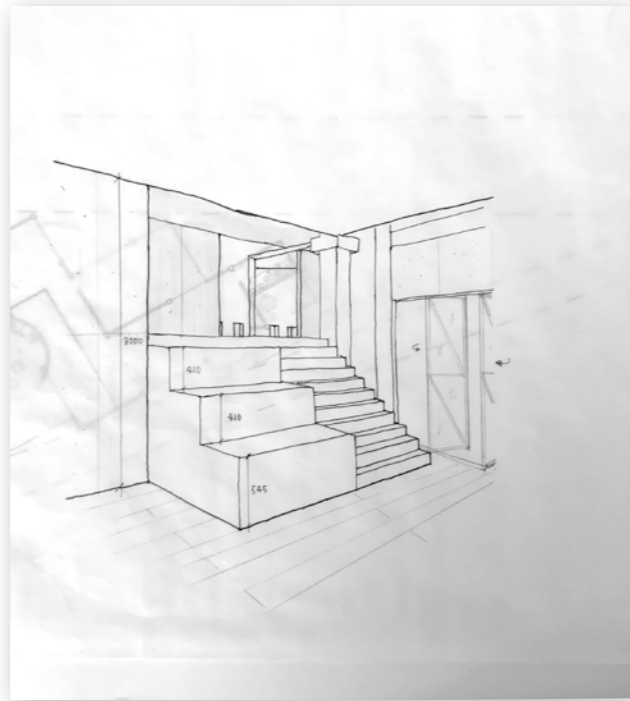
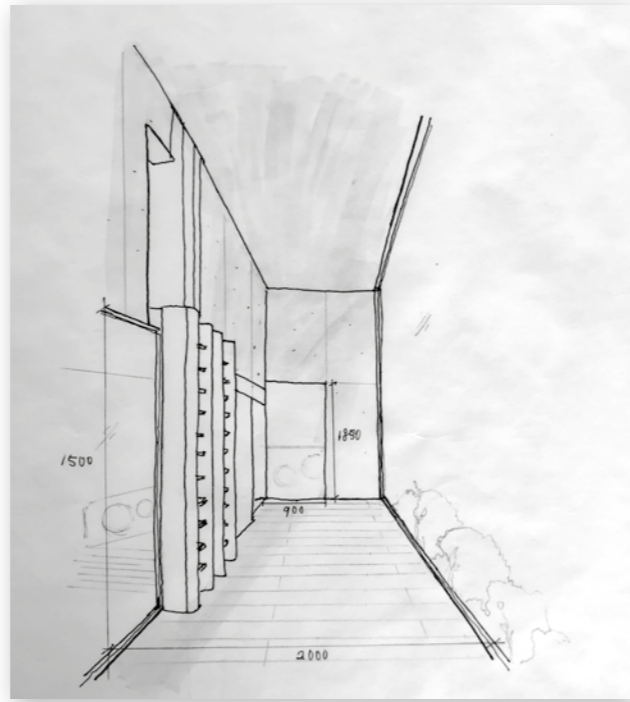
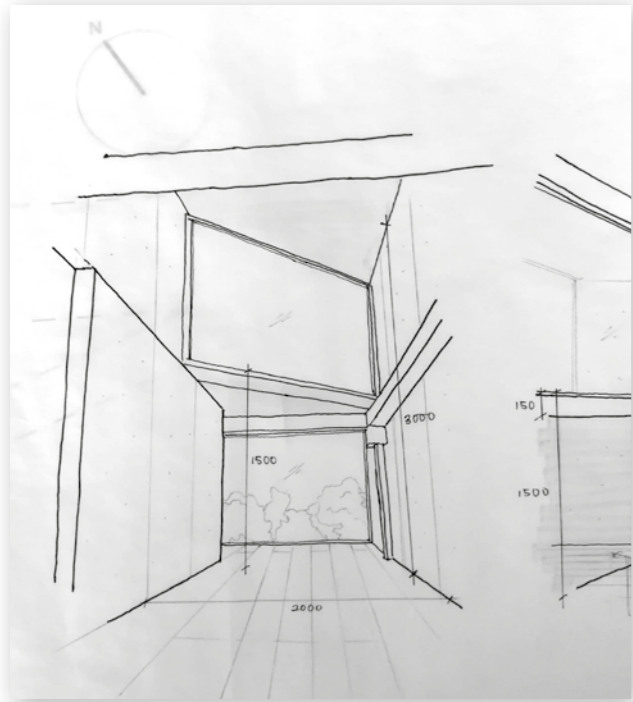
C



Section B-B









Kinderdorf How to Create an Active Kindergarten Environment

Nicole Hooi Yi Tien



Childhood is the most important period of learning in one's life. Current literature states that movement is important for the holistic development of children and enhances other aspects of learning, such as cognitive development, spiritual, emotional, sociability and behaviour. The body is literally a tool of learning for children. They need to move in order to learn. Therefore, the primary goal of this project is to create an active kindergarten environment for children. Contextually, the site is a newly developed area located between a forest, a lake and a well established neighbourhood. It has the potential to act as a centre-point for people from all social groups and a junction between all the surrounding areas of the local community due to its strategic location. In order to achieve the goal set and to relate the project to the site context, a few design parameters were set:

Community Space

The site lies between a forest, a lake and an established neighbourhood. It has the potential to act as a hub for everyone in the community. By combining a kindergarten, a shopping area and a community

space, the project should attract people from all social groups and serve as a junction between the surrounding areas. Furthermore the architecture itself allows for fluid movement through and around it.

Elevated Kindergarten

The kindergarten is elevated above the community centre. It is a vital place for the community, since it provides a space for its youngest members, as well as giving a purpose to the building. It will inevitably attract families and parents, which will then naturally populate the area. Its elevation gives protection to the children without completely separating the building from the other community spaces.

Roof Village

The kindergarten itself is split into small buildings, which contain the different facilities. The scale of the houses is oriented around the children themselves. The atmosphere of a village provides a tight bond between the children and their environment, which they can identify with. The houses and the open spaces between them create a natural dynamic of outdoor and indoor play.



SITE
The site is located adjacent to a forest and a lake.



AXIS
An axis is cut at the centre to break down the volume and increase the permeability of site.



ENTRANCE
Half of the premises on the ground floor are open to the local community



ELEVATE
The kindergarten is elevated for security purposes and different experiences for children



CIRCULATION
Interlocking houses wrap around the centre, which is a common outdoor area



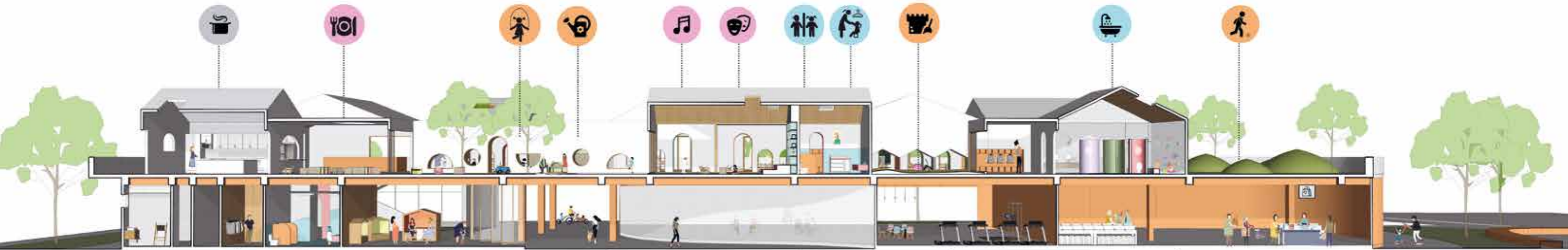
Class room



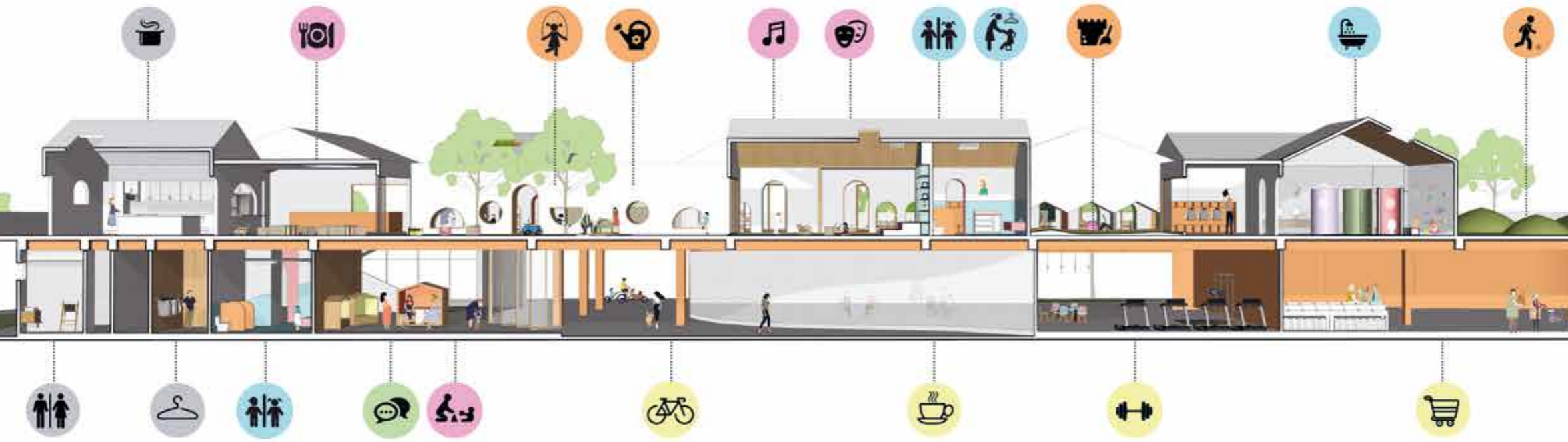
Site plan

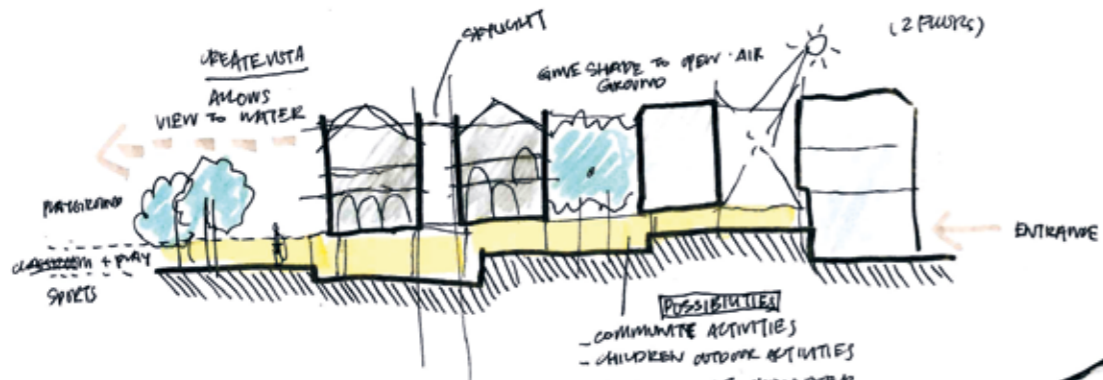


Section A



Section B

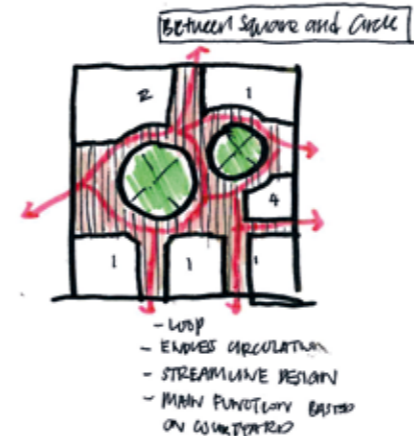
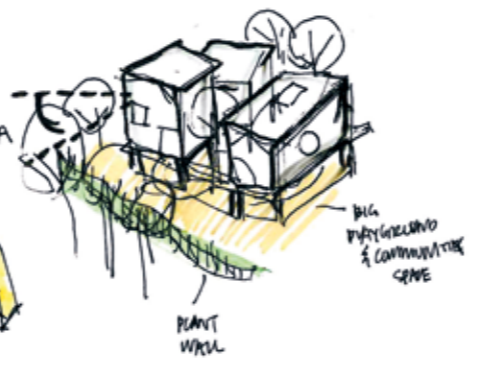




- POSSIBILITIES**
- COMMUNITE ACTIVITIES
 - CHILDREN OUTDOOR ACTIVITIES
 - GROUND CAN BE MODULATED
 - OUTDOOR CLASSROOM NEXT TO COURTYARD

CONCEPT

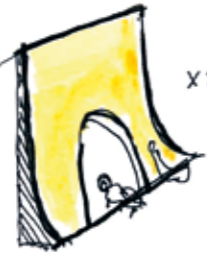
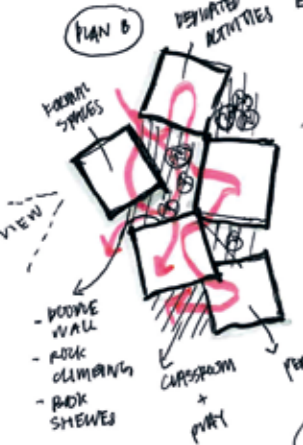
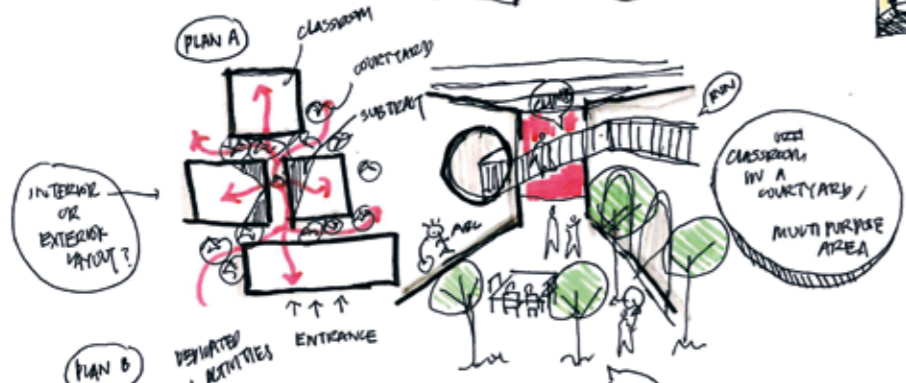
- 1) INSIDE OUT
- 2) CIRCULATION
- 3) FLEXIBLE



Kokogawa Kindergarten

- 1) Classroom
- 2) Playroom
- 3) Faculty room
- 4) Kitchen

- Different sizes
- Ambiguous openness/continuity to environment
- Hierarchy of space

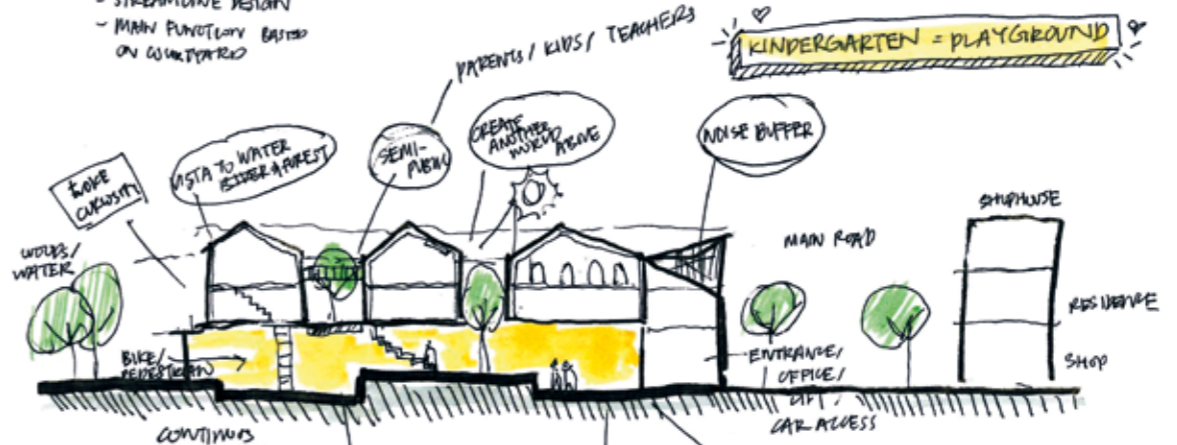


PLAN A

- CLASSROOM INSIDE
- COURTYARD OUTSIDE
- PLAY OUTSIDE
- UNEQUAL CIRCULATION

PLAN B

- CLASSROOM OUTSIDE
- COURTYARD INSIDE
- PLAY EVERYWHERE
- EXPLORE CIRCULATION

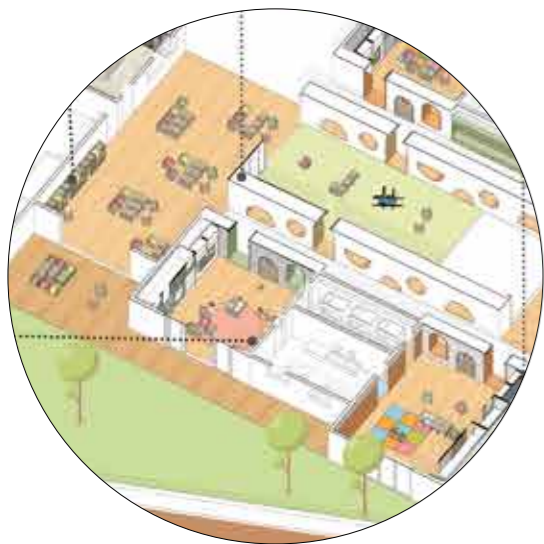




Classroom



Bathroom







A Sense of Adventure How Risks Provide Self Confidence

Zhen Fai Wong



One would frown upon seeing the words »risk« and »adventure« being associated with a kindergarten. Parents' ideas of their precious children getting injured and not diligently sitting in class is an issue plaguing today's education system. But how exactly would children benefit from more risk and a sense of adventure?

The concept for an adventure playground came from a Danish landscape architect who realised that children were playing anywhere else (construction sites, bombed out buildings) but the playgrounds that he designed. Playgrounds are designed from an adult's perspective, which is rigid and restrictive to children's play. Hence, adventure playgrounds are incorporated into this design for a kindergarten and categorized in two separate age groups: 0–3 years, and 4–6 years.

The younger children will have an open courtyard as their blank canvas. There they will be able to use large but cushioned modular building blocks with mortise and tenon joints. These building blocks in various forms will allow them to build forts, platforms, houses and so on, according to their own imagination and creativity. The older children will be using raw and natural materials such as wooden planks, recycled tires and ropes. They will also have access to a workshop with tools such as hammers and nails to form their own flexible DIY playground on the adjacent open courtyard.

Adventure playgrounds are designed to provide risks (potential dangers), not hazards (definite dangers). This is a fact that protective parents will have to understand. The playgrounds and workshop will, of course, only be accessible under adult supervision. But the act of building your own playground

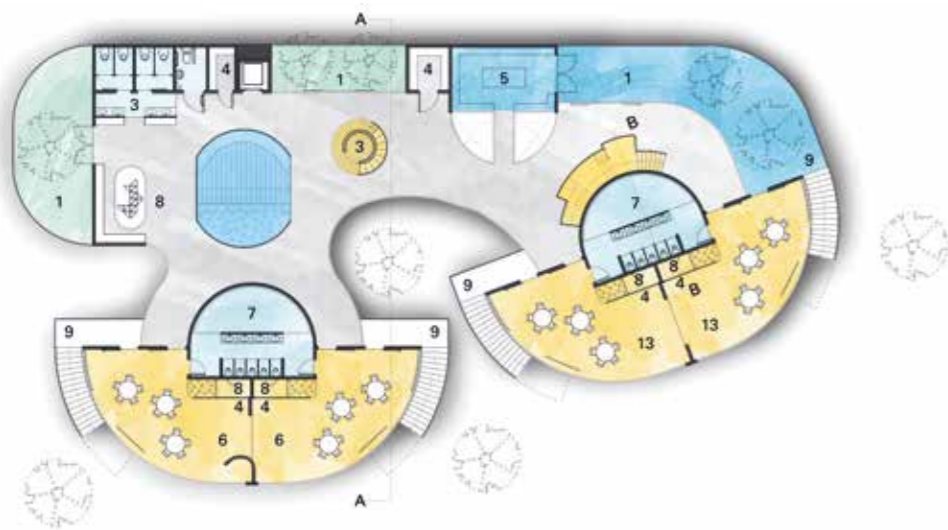
will not pose any immediate hazards, provided that sufficient guidance and supervision is given to the children. With the ability to fantasise and literally build their own adventure, children will be able to develop physical motor skills and confidence from being allowed to handle more complex tasks. But primarily, children will effectively develop risk judgment and problem-solving skills while manoeuvring through the construction process. At the adventure playground, a child can be the king of the jungle today, and conqueror of kingdoms tomorrow. In addition to the new form of learning above, the unconventional classroom typology in the kindergarten also allows flexibility for the educators to creatively structure their pedagogy according to the children's specific needs and also the possibility of outdoor-integrated learning with the adjacent courtyards and roof terraces with a direct view onto the lake. This improves the children's cognitive function and sense of attachment to the place. The ineffective and restricted traditional classroom typology as we know it today is the by-product of the Industrial Revolution: it is designed to drill and produce a productive workforce, not to develop the inner potential of individuals. Moreover, the kindergarten itself boasts a natural building form that flows organically to allow a smooth circulation route for children. This lets them move around dynamically, without interrupting their free play with the additional playscapes inside and gives them more platforms to form their own adventure and role play. The wooden louvered façade reflects the surrounding untouched landscapes along with the boundary wall that homogeneously emerges from the ground when viewed from the outside.



Ground Floor

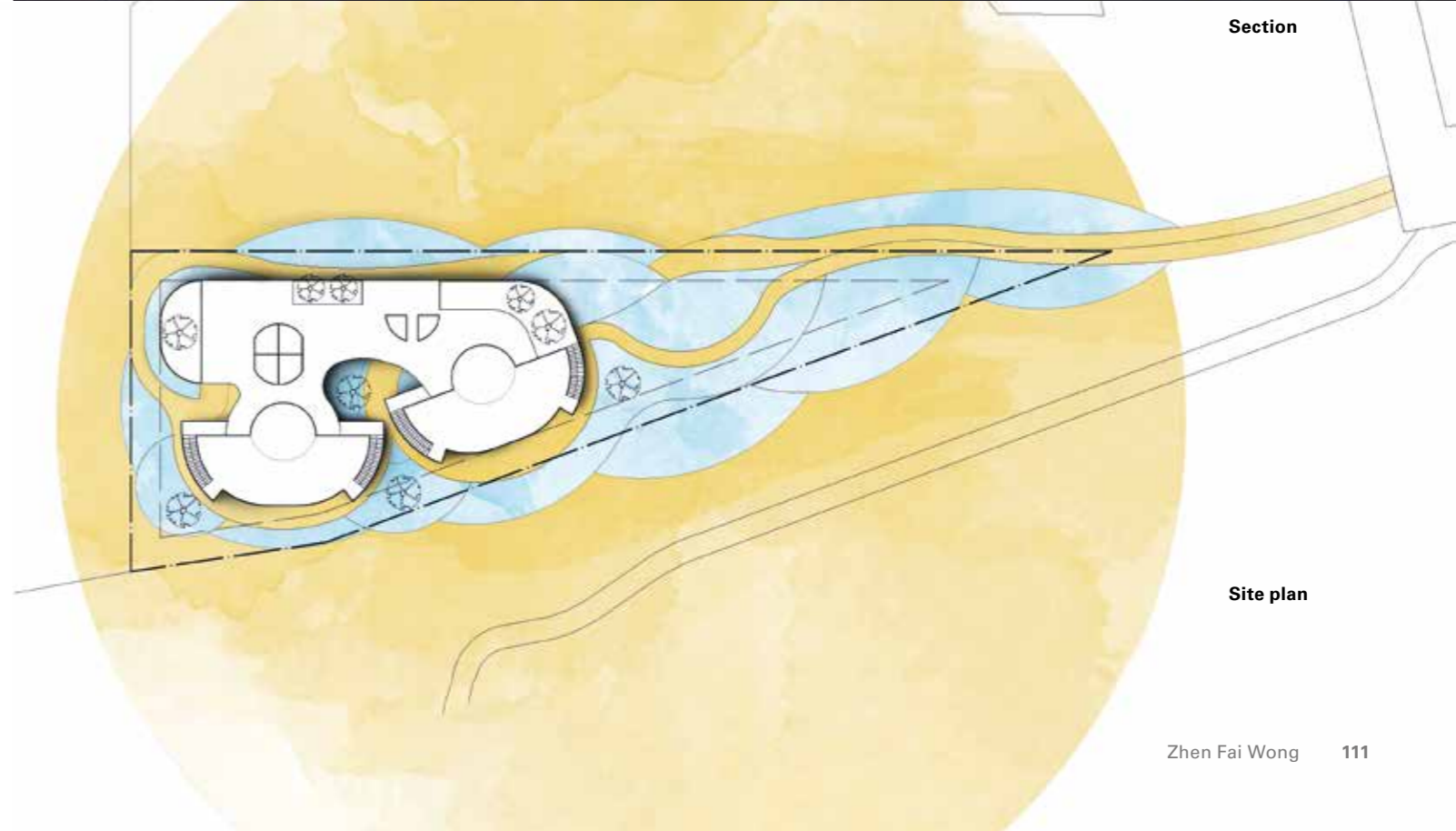


Section



First Floor

- 1 courtyard
- 2 general WC
- 3 cave hideout
- 4 cave hideout
- 5 adventure playground
- 6 classroom
- 7 children's WC
- 8 pocket space
- 9 roof terrace access



Site plan



Perspective



Adventure Playground



Flexible Learning



Circulation Flow



Fantasy Playscapes



View to Lake

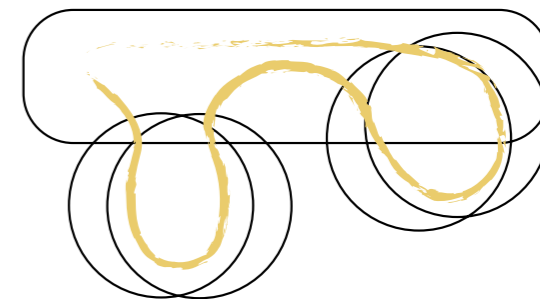


Homogenous Boundary Wall

Diagrams

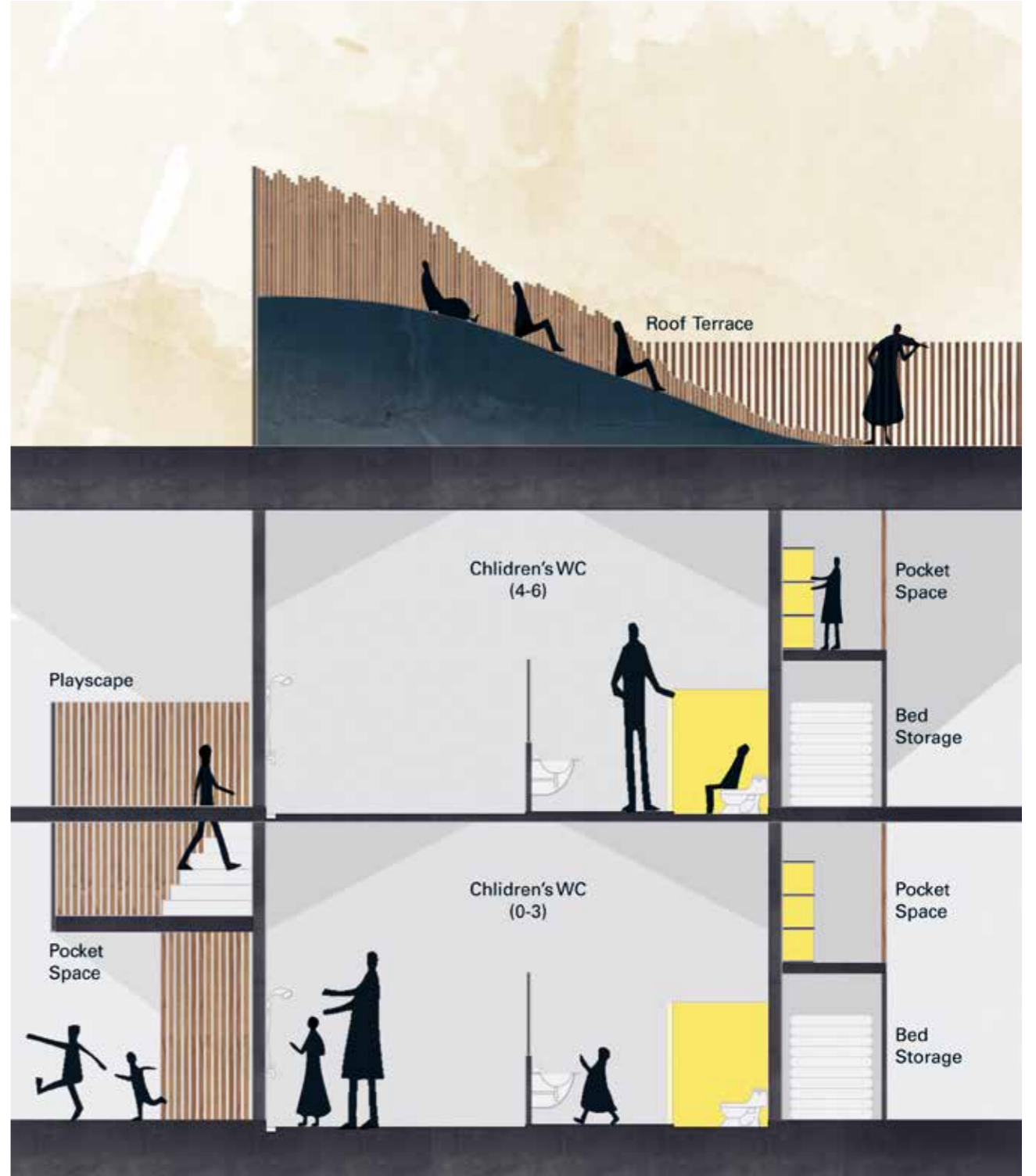


Perspective Entrance





Perspective Roof Terrace







Pepples

How to Encourage Children's Creativity through the Five Senses

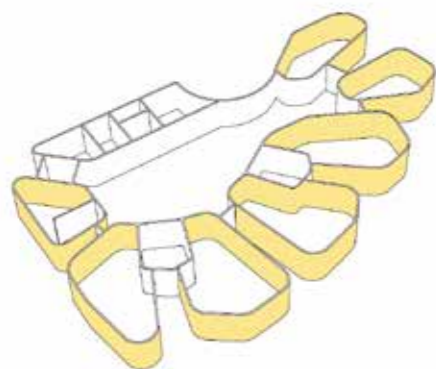
Wei Jin Chung



The »Pebbles Kindergarten« focuses on the stimulation of children's senses to encourage creativity through the usage of natural materials and openness of space to the natural surroundings. The natural tones and textures of the environment grow with the children as they age over time, a characteristic which also induces familiarity with Mother Nature to children. The kindergarten simulates a tiny society in which each cellular classroom flows out to a central communal gathering space in which various activities can take place: eating, dancing, playing, acting etc. This helps the children to improve their communication skills as they learn to work and play together. The central focus of art and the process of creating art encourage children to unleash their endless creativity, which not only helps in the development of cognitive thinking but also fine tunes their motor skills.



Diagrams



Nature-inspired cellular spaces



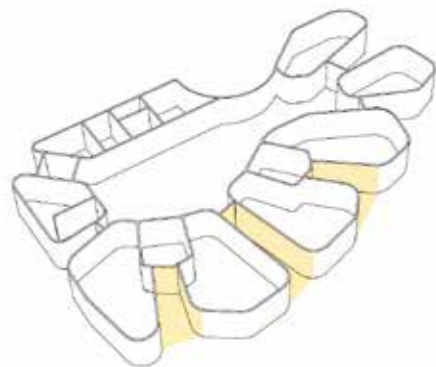
Multipurpose space for children's interaction



Differentiation of spaces with materials



Angular and projecting art room for optimum view of landscape



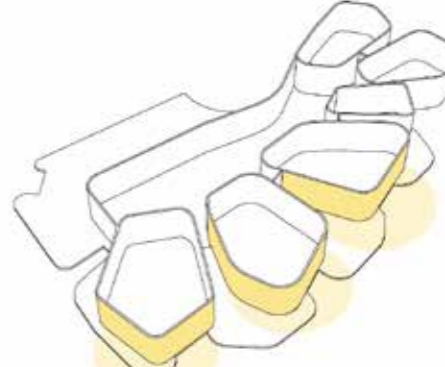
Pocket spaces in-between classrooms



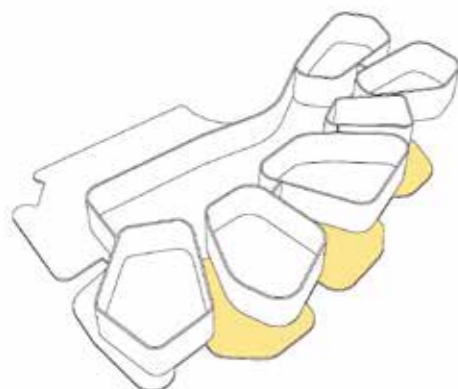
Arrangement of classrooms on the south for sufficient sunlight



Direct access to garden



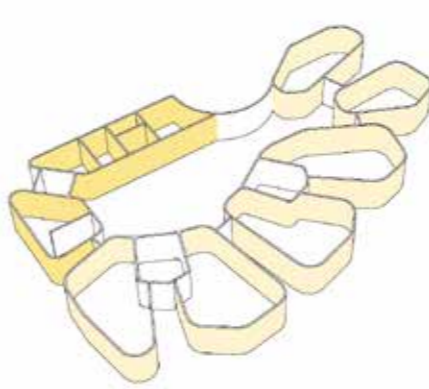
Lake view from first floor classrooms



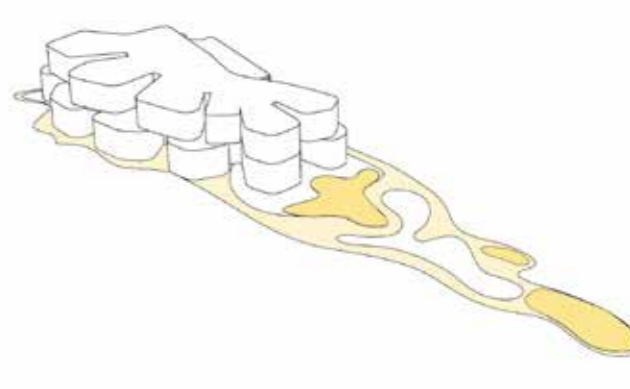
Pocket gardens in-between upper floor classrooms



Lively visual of the children's garden facing the existing flats



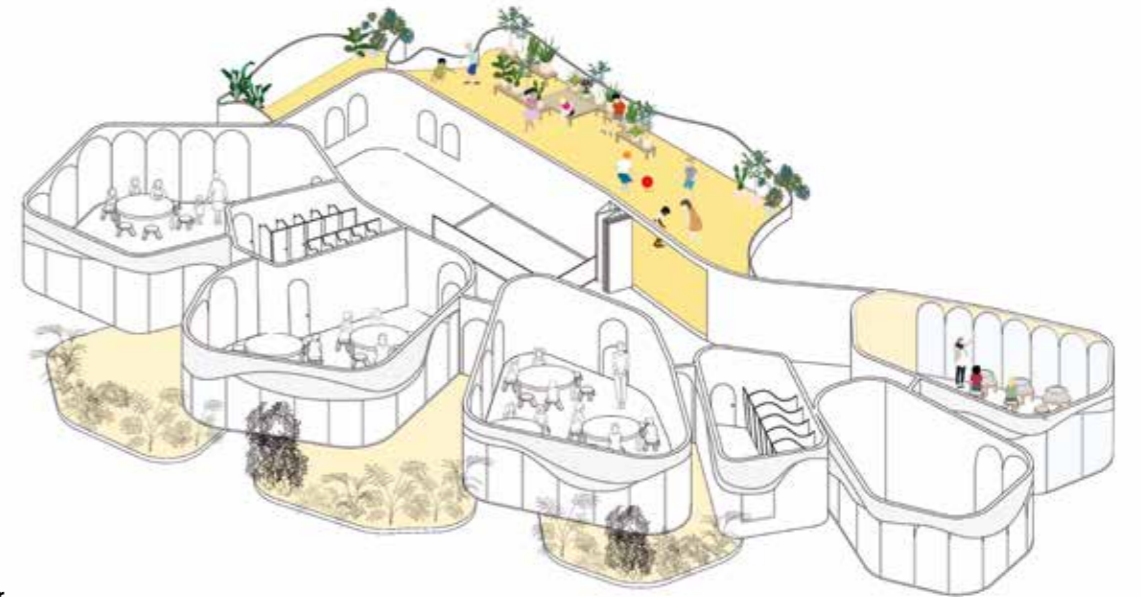
Separation of administration and children's space



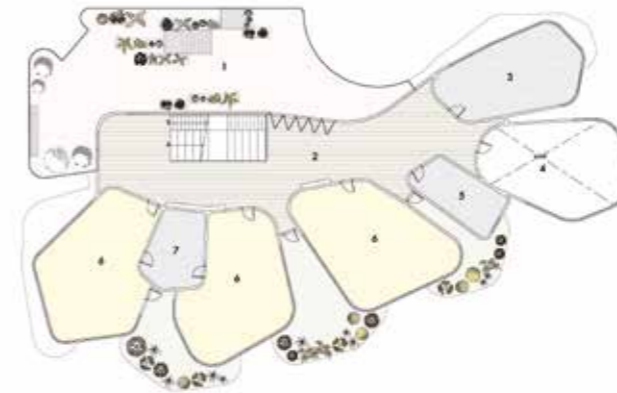
Undulating landscape to simulate the senses of children



Ground floor



First floor



Visual Perception of Colour

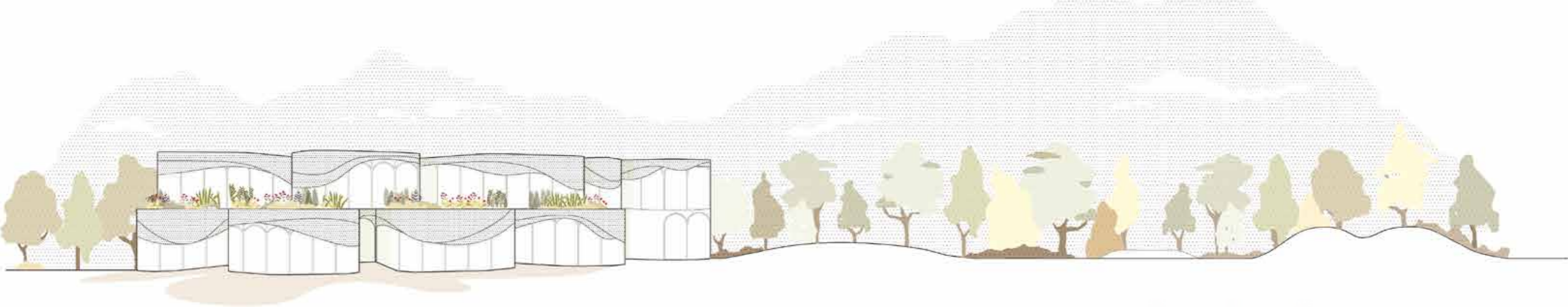
Light-toned colours are used in the overall interior spaces as the kindergarten symbolises a blank canvas that gives children the utmost freedom to unleash their creativity. Instead of utilising colours to differentiate spaces, different tones of natural materials are used instead to instil familiarity with nature into the children's surrounding.

Nature and Texture

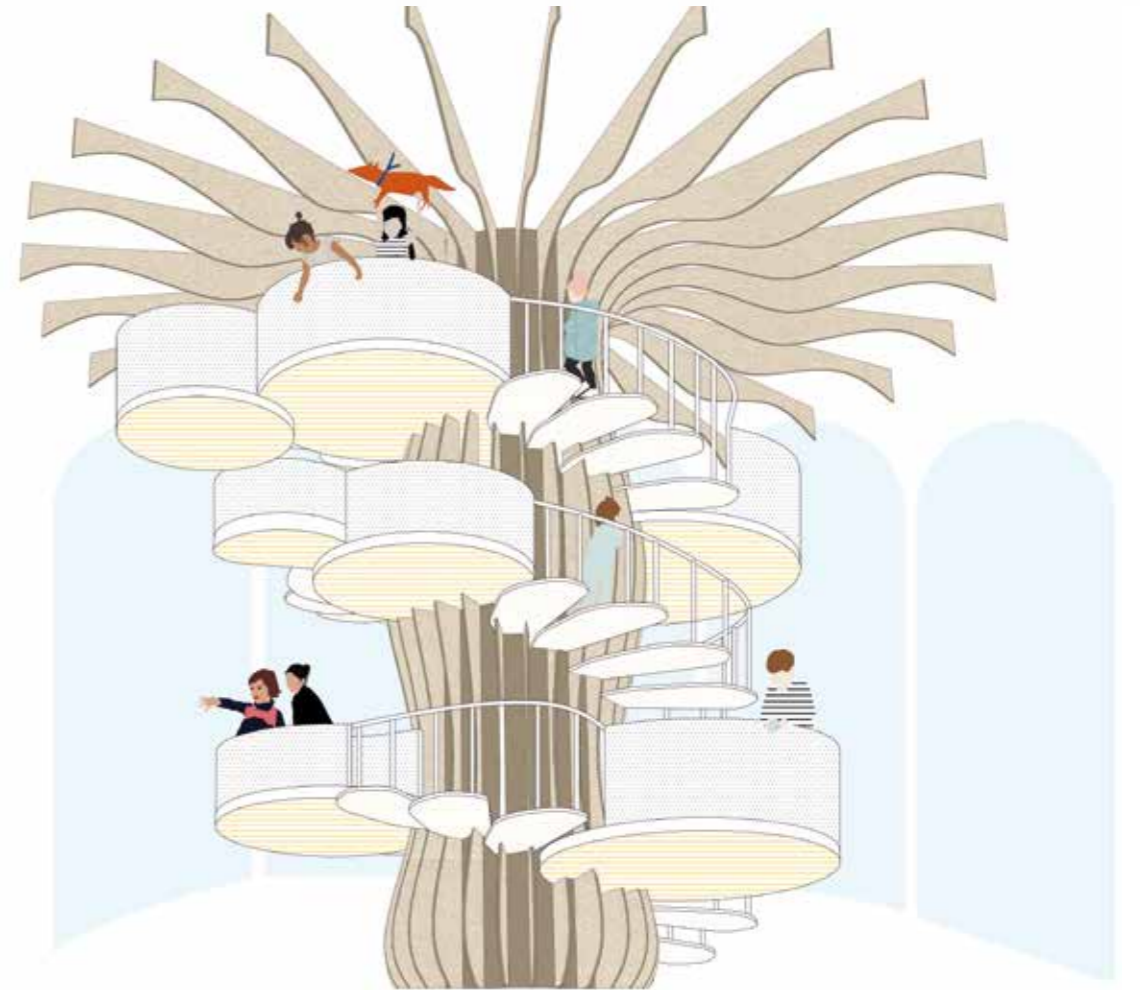
Natural materials like wood are used throughout the various spaces as they age over time, growing and evolving with the children. The different textures of these materials stimulate the visual and tactile senses of children, encouraging creativity on a daily basis.

Art and Creativity

This kindergarten is a playground for art and creativity. It focuses on providing children the experience of creating with their own hands. The sense of touch and the freedom to mould or make things with their own hands not only spark their creativity but can also improve their fine motor skills, leading to better cognitive development.



Section



Tree House



Bubble Ship

How Nature Influences Children's Physical, Mental and Social Development

Polina Shvets

Common Spaces

Hinge-like common play-space linking two class room clusters
Open terrace for common use

Connecting Nature

Waterfront of the lake
Skylights and wide windows
Natural materials

Communication

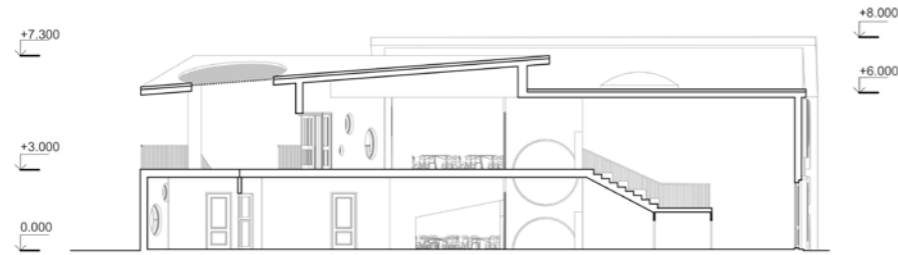
Common play areas
Common bathrooms between groups
Open outer playground at the lakefront



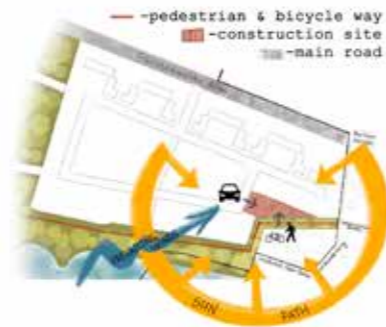
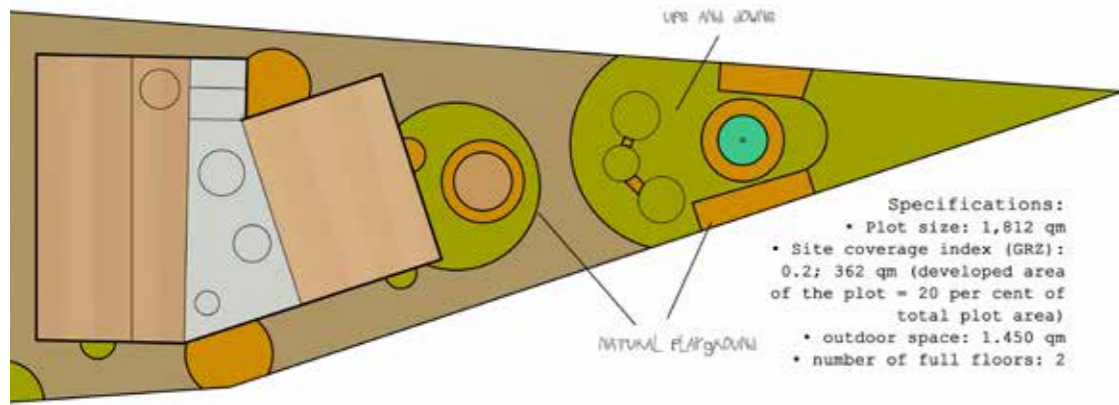
Section A - A



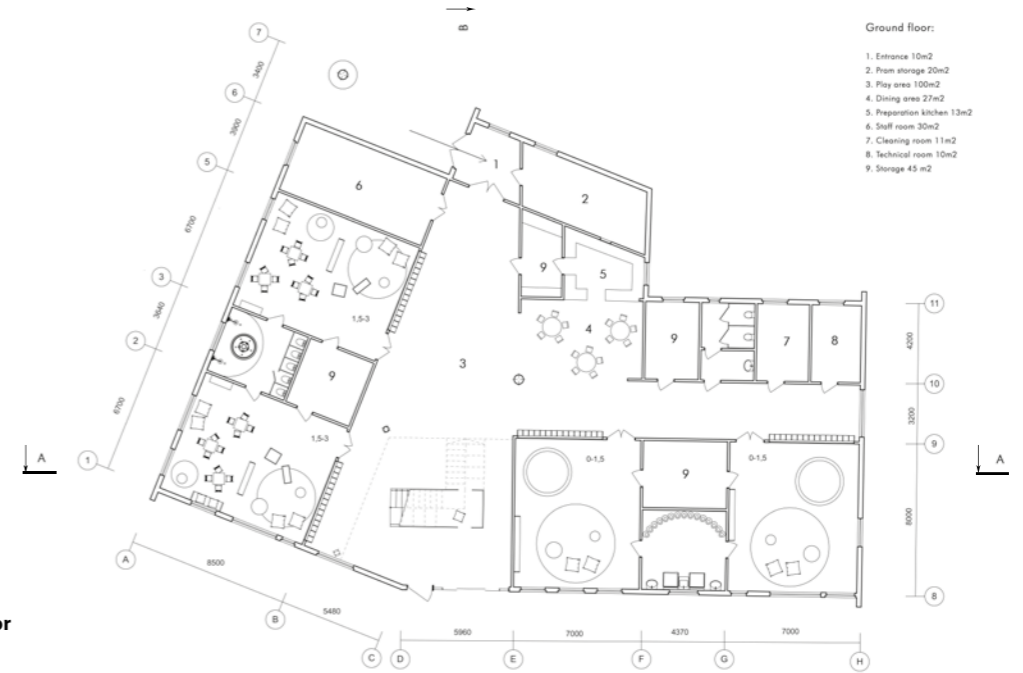
Section B - B



Site plan



Ground floor



First floor





Exterior elevation



Interior elevation



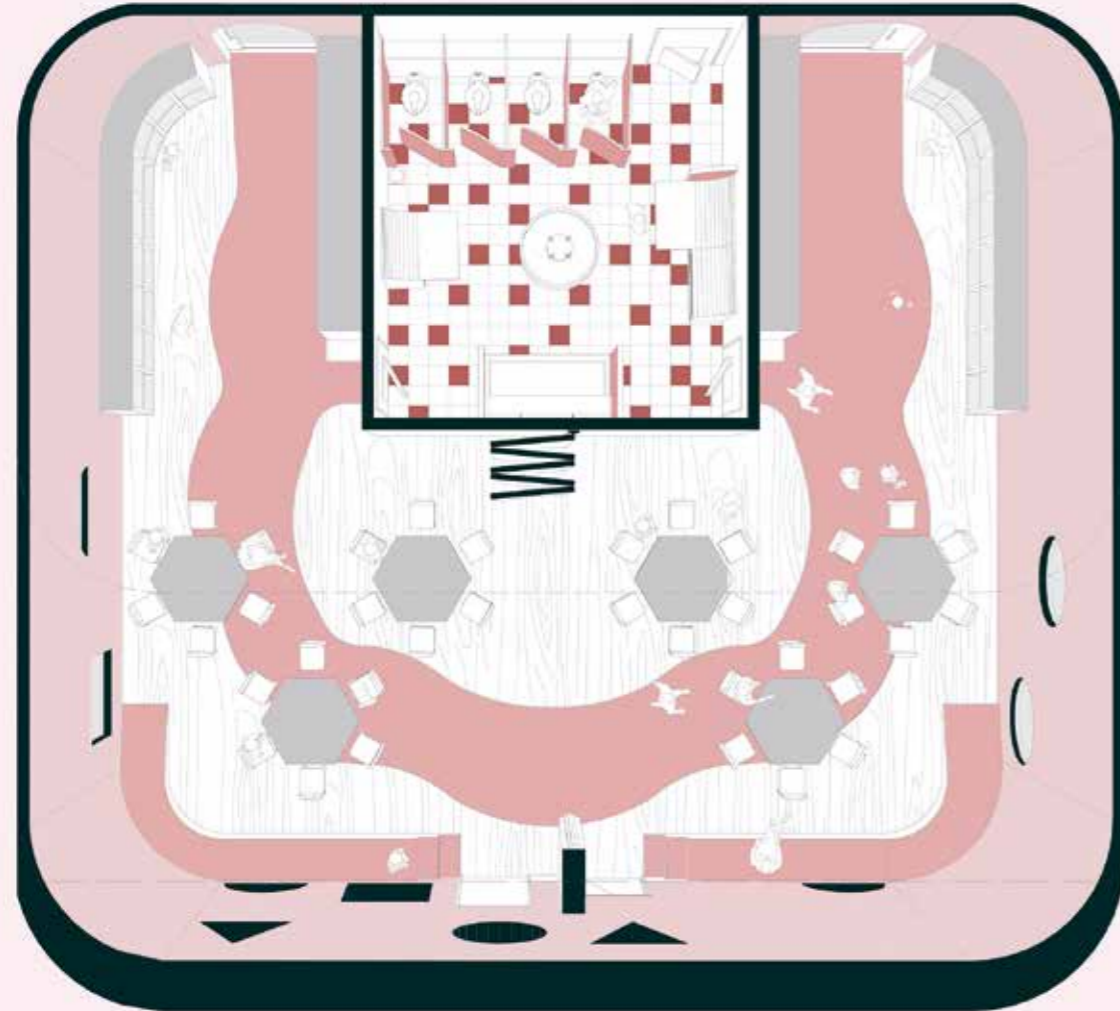
Elevations



Lauf and Laugh

How Visual Interactions Relate to Physical and Emotional Growth

Ee Tian Lau



The free-flow circulation encourages the children to run freely, not just horizontally but vertically as well. The mezzanine floor opens the view from the corridor to a floor above while allowing a visual connection between classrooms, to the dining area and to outside. The shapes of the windows encourage creative thinking in the children, stimulating them to consider the possibilities of space. Sunlight entering through these openings creates a focused environment in which to begin kindergarten education as well as playful shadows. Classrooms are linked through the windows and the partitions, forming bonds behind the children. The wide spread of land in which to play – from the mezzanine to the green-roof area – was chosen so the children can run and laugh.

Piano Keys

The balance between the black and white keys is captured in the floor plan. The black key is not like the white key, yet it brings colour to a music score. Just as the washroom is not like the classroom, and yet it brings a distinguished character to the circu-

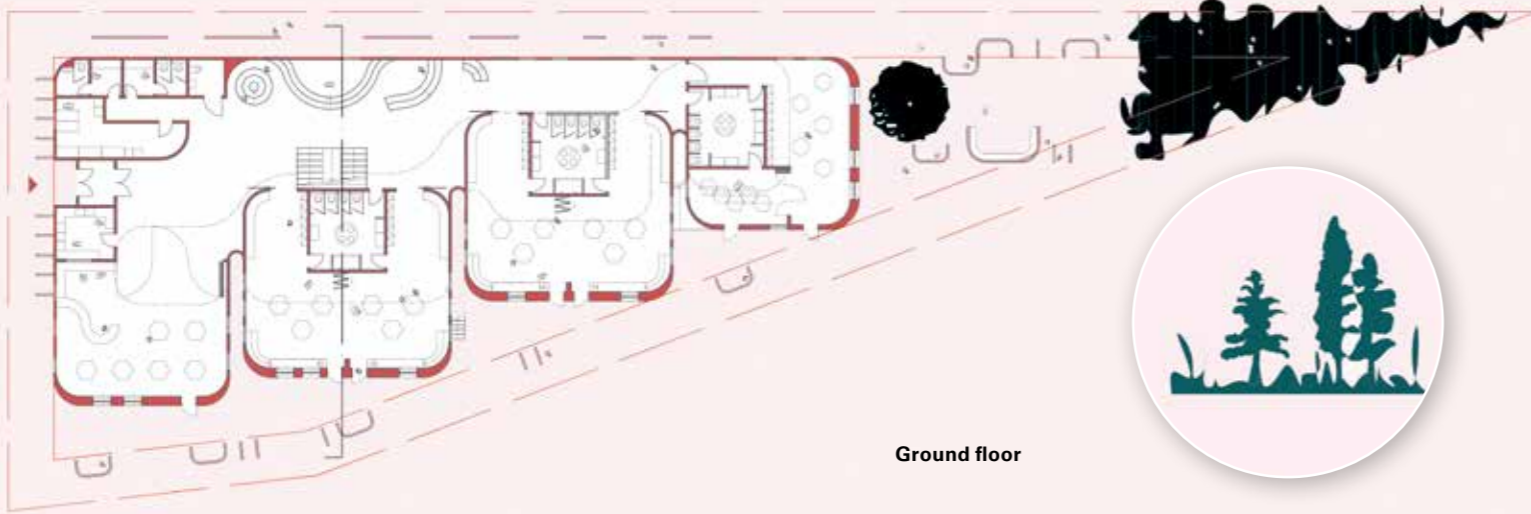
lation. The washrooms are minor keys to the whole score but they themselves create a different spice to the song, like a chilli. The flexibility of circulation via the washroom helps enrich the classrooms to provide ease and function.

Integration of Levels

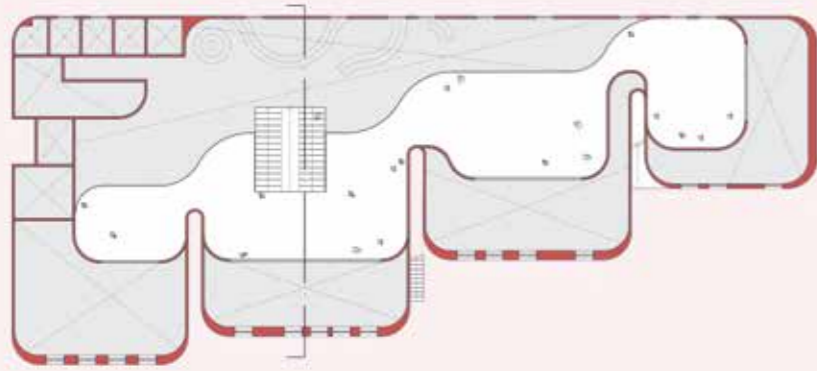
In the chromatic scale, adjacent notes are played. In this design, the continuity between spaces is played just like a musical piece – interrelated. Children can move freely between one space and another, since they are mostly curious creatures, it is important to ensure a flexible circulation so children can investigate.

Facing Nature

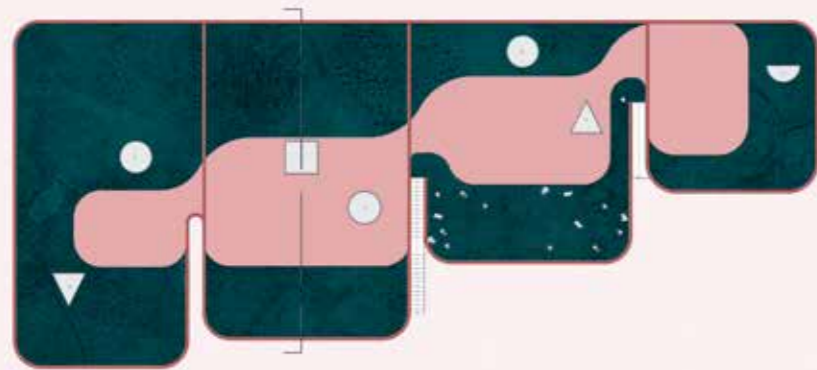
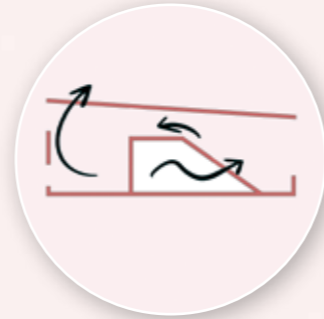
Exposure to nature makes one feel better emotionally; it contributes to one's physical well-being. A child's development at a young age is crucial, and nature being part of this growth is important. In this kindergarten, children would face the natural world while also attending classes and learning, all to better stimulate their brain.



Ground floor



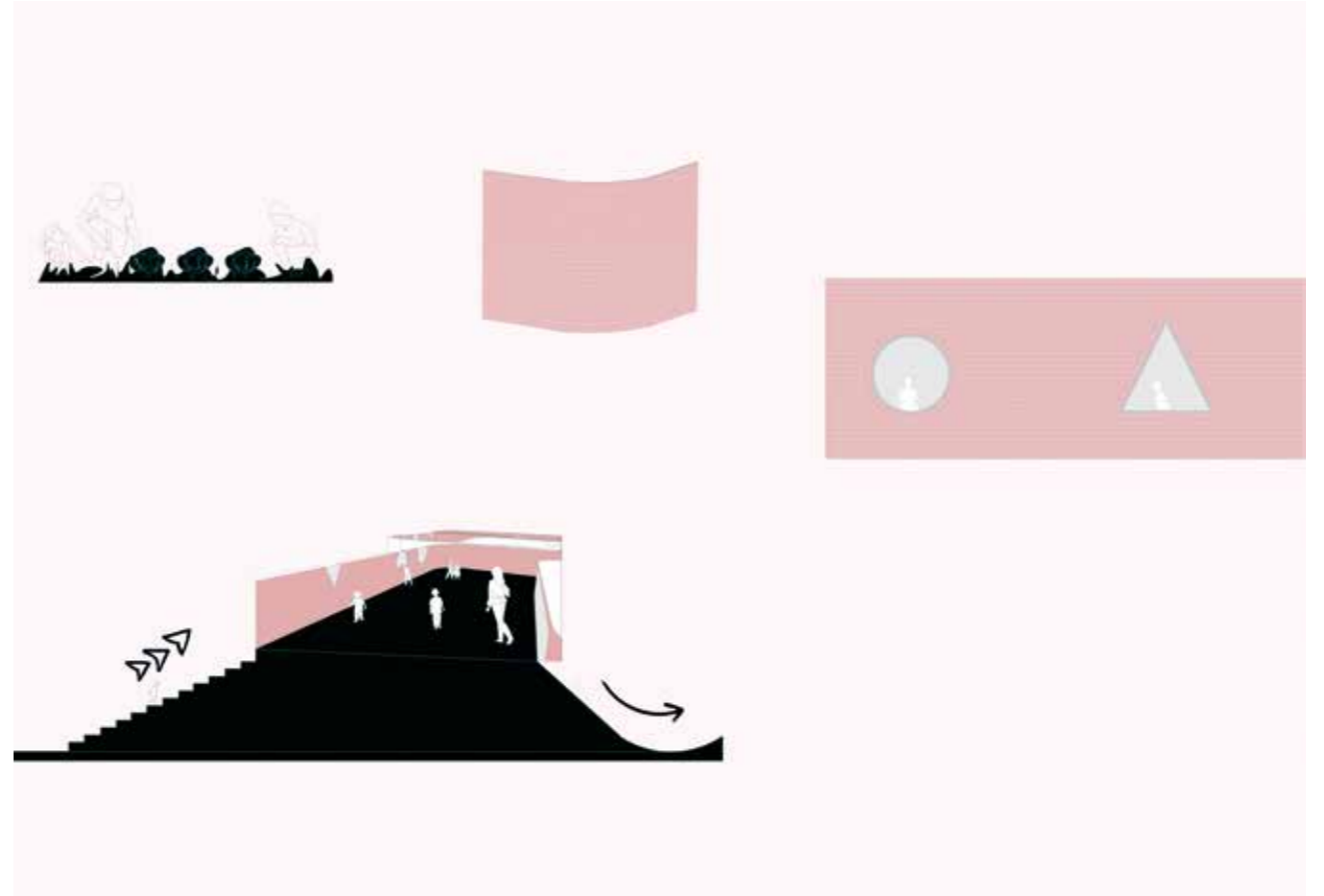
First floor



Roof garden



South elevation



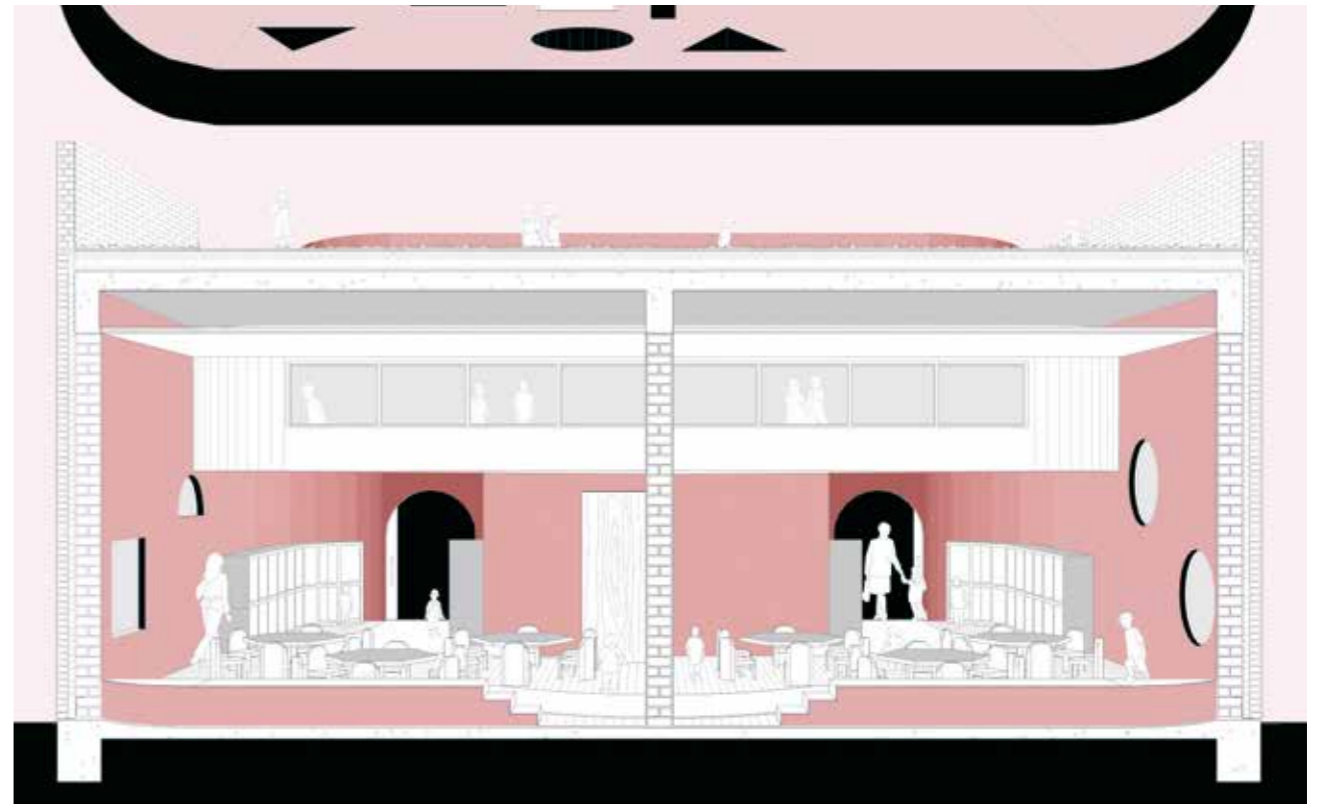
Architectural elements



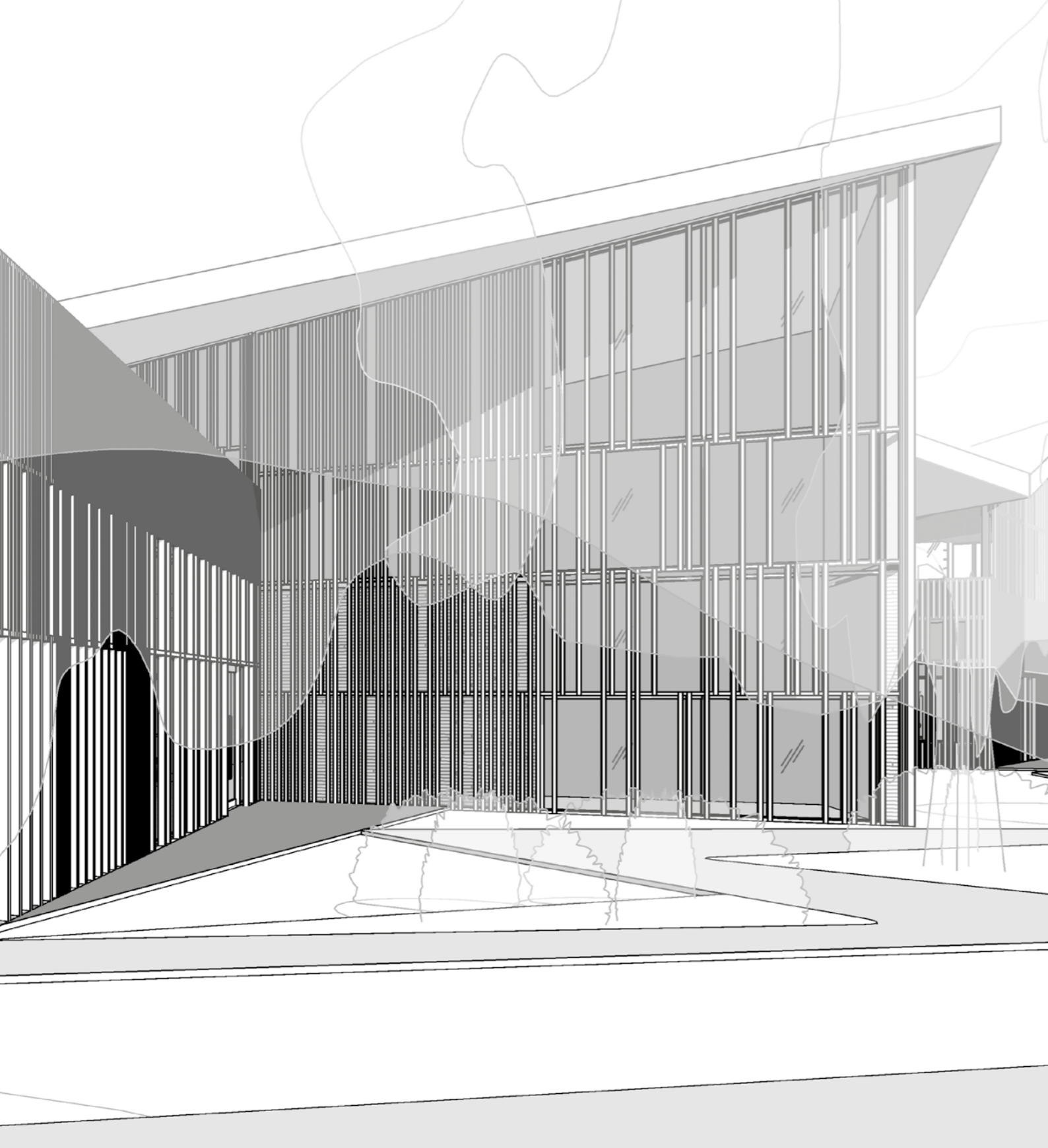
Site Section



Diagrams



Section



Unfolding the Personality How to Design a Flexible Space

Sabrina Tania Ortiz Ramírez



The circulation and context were the most important topics to explore during the design process of this nursery school. For the development of this nursery, a non-typical typology was used as a basis for the distribution of the areas. An important part of the design was to analyse different typologies and based on that create one adapted to the site.

The site played a very important role, due to its irregularity. That is why the distribution of the areas and the functional programme is closely linked to it. In the same way, the location of the site was another decisive factor for the organisation of spaces, since the objective of this project is interaction with the natural surroundings. For the shape of the building, we can talk about individual building units or clusters with traffic routes interconnected through common spaces or flexible multipurpose rooms.

Typologically, the idea of the piazza of the architect Herman Hertzberger was taken as a basis. He developed this for the first time in 1960 at a Montessori school in Delft, the Netherlands. The pedagogic concept of a common area between enclosed traditional classrooms is taken up in order to avoid long corridors. In contrast, a central atrium typology was also avoided in order to open the activities to the surroundings. The result is a flexible space, where the multiuse rooms, dining hall and terrace play a major role.

The triangular folded geometries of the roof and also the design of the playground's landscape are

both clearly inspired by an origami idea. The concept of the building is for it to serve as a refuge for the children in order to allow their personalities to unfold as they grow.

The materiality of the project is based on going back to nature and proposes wooden exteriors and interiors. The cleanliness and elegance of the interior design, which is mostly covered with wood, contrasts with the complex geometry of the ceilings and the landscape design of the playground, thus generating a balance. And the flexibility of the spaces is achieved by means of floor-to-ceiling glass panels and sliding doors.

The façade covered with wood serves to shade from sunlight and protect the facades in the summer, and also to integrate the building into the context through its materiality. In addition, each façade, depending on its orientation, is more or less protected. The separations of the openings between the wooden elements are different depending on whether it receives a greater or lesser amount of sun (contains more elements, close together in the south façade, and fewer, more separated elements in the north façade).

The surroundings are gifted with many trees, and a lake could provide a healthy and peaceful environment for the development of the children, which is a key factor of the architectural design proposal. The children could be taught to play with nature, but also learn to respect and protect it.



Design Parameters

Piazza [typology]

The pedagogic concept of a common area between enclosed traditional classrooms is taken from the Montessori educational system, in order to avoid long corridors. A central atrium typology was also avoided in order to open the activities up to the surroundings. The result is a flexible space, where the multiuse rooms, dining hall and terrace play a major role.

Origami [form]

The triangular folded geometries of the roof, as well as the design of the playground's landscape, were clearly inspired by an origami idea. The concept of the building is for it to serve as a refuge for children to let their personalities unfold.

Wood [materiality]

The materiality of the project is based on going back to the nature and propose wooden exteriors and interiors. The surroundings, gifted with many trees, and the lake could provide a healthy and peaceful environment for the development of the children, which is a key factor of the architectural design proposal. The children could be taught to play with nature, but also learn to respect and protect it.

Above: Foldable object made of plywood panel.

Source: Foldtex

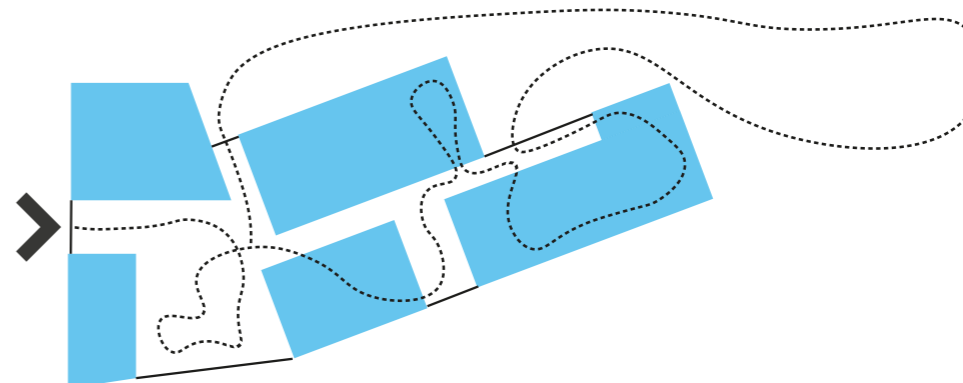
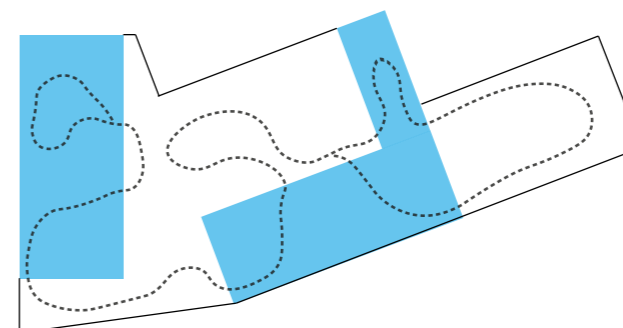
Left: Josef Albers discussing paper sculptures presented by his students during the Preliminary Course at the Bauhaus.

Source: The Josef & Anni Albers Foundation

Bottom: Folded plate structure (DLFP), for the Théâtre Vidy, Lausanne. Image: IBOIS

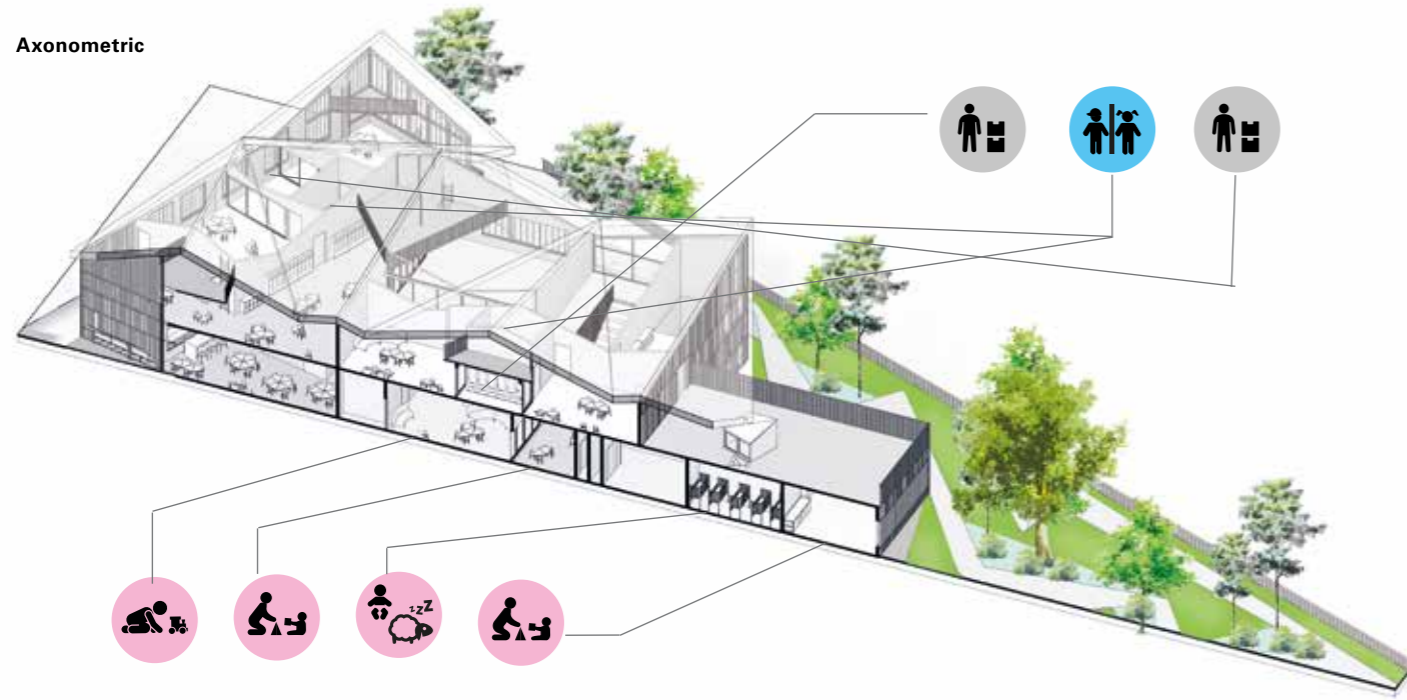


Site plan



Circulation

Axonomic



East elevation



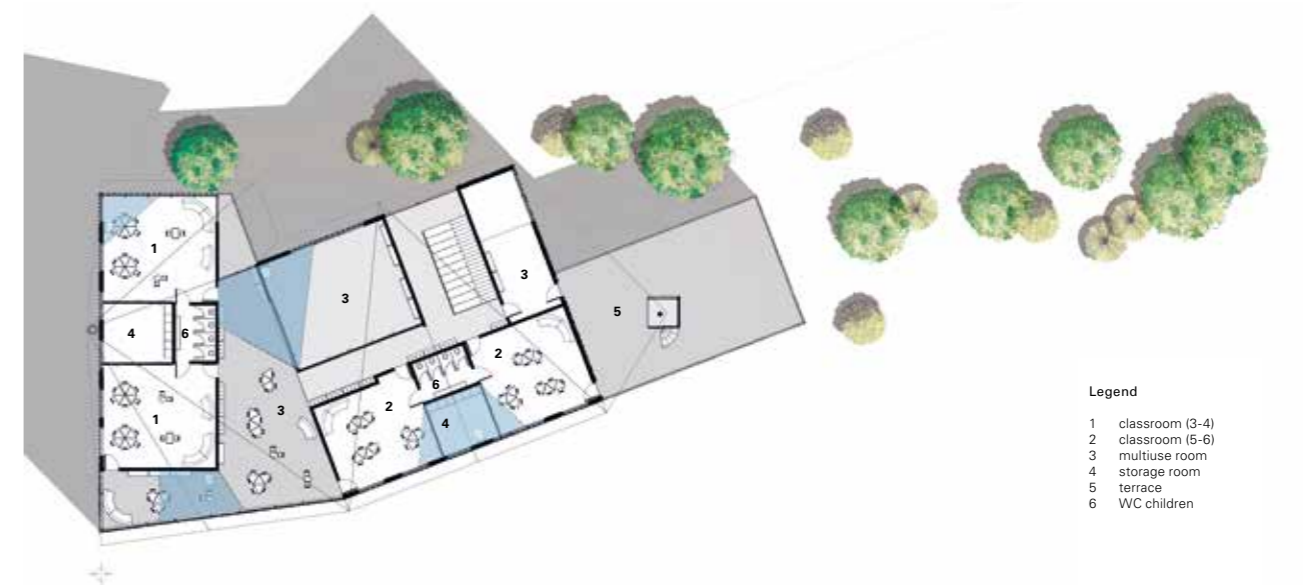
West elevation



Legend

- 1 classroom (0-2)
- 2 classroom (2-3)
- 3 sleeping room
- 4 multiuse room
- 5 main entrance
- 6 pram storage
- 7 children's kitchen
- 8 canteen
- 9 parents' group room
- 10 management office
- 11 staff and break room
- 12 kitchen
- 13 cleaning room
- 14 changing room
- 15 storage room
- 16 technical room
- 17 WC children
- 18 WC visitor

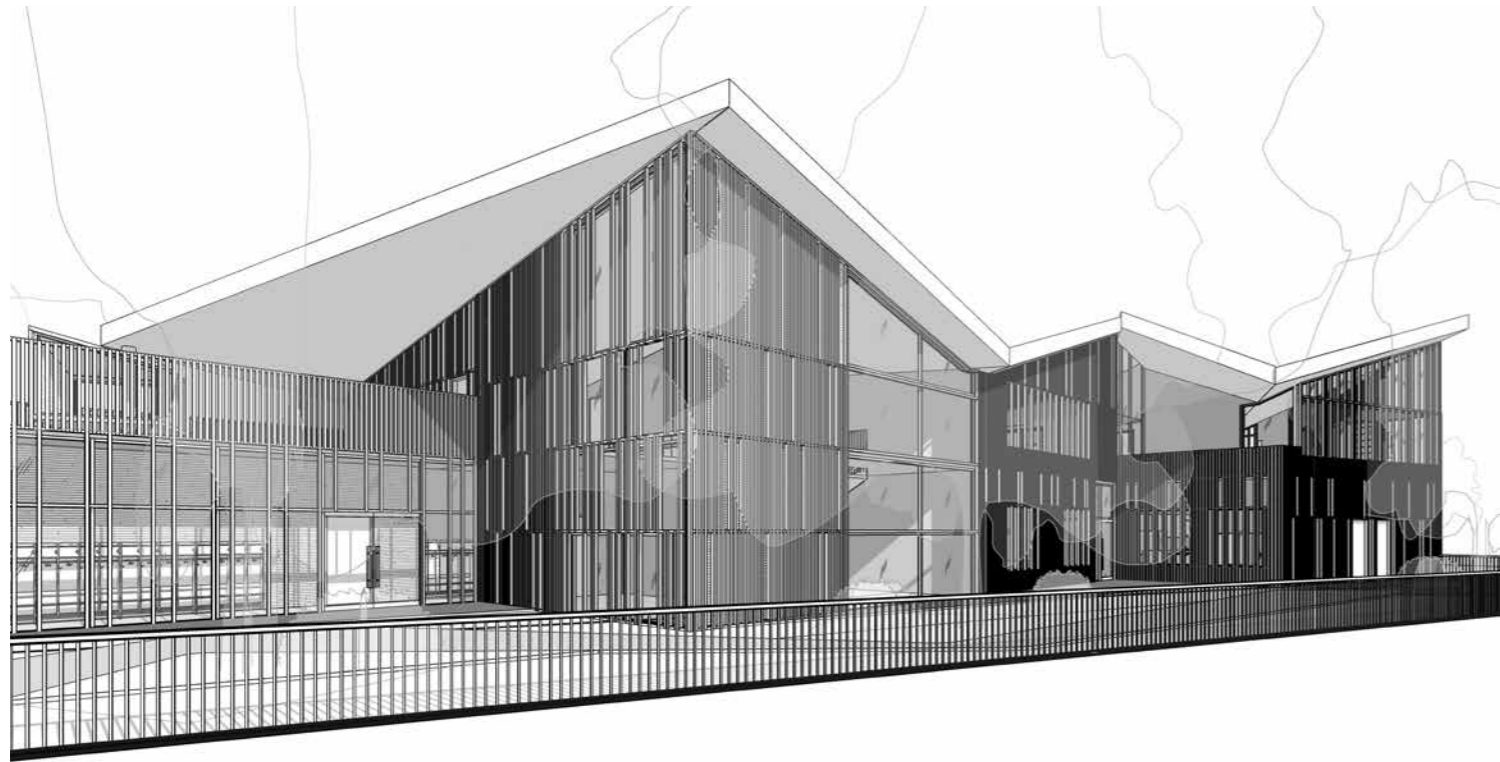
Ground floor



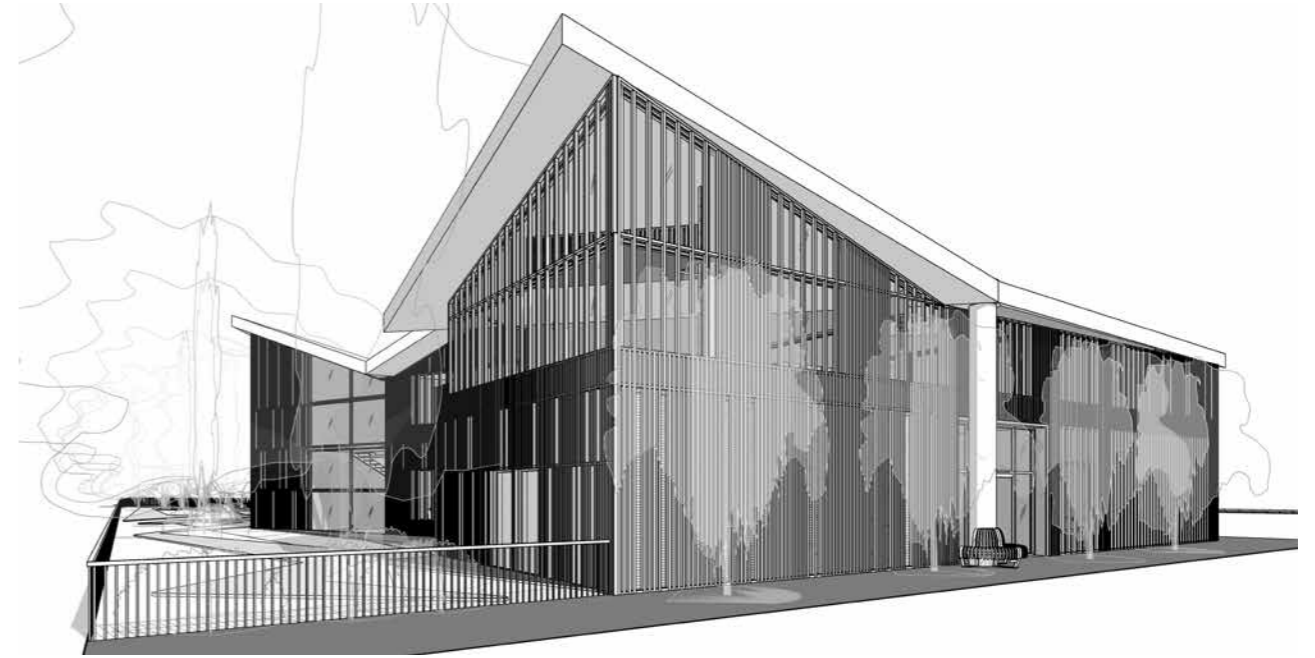
Legend

- 1 classroom (3-4)
- 2 classroom (5-6)
- 3 multiuse room
- 4 storage room
- 5 terrace
- 6 WC children

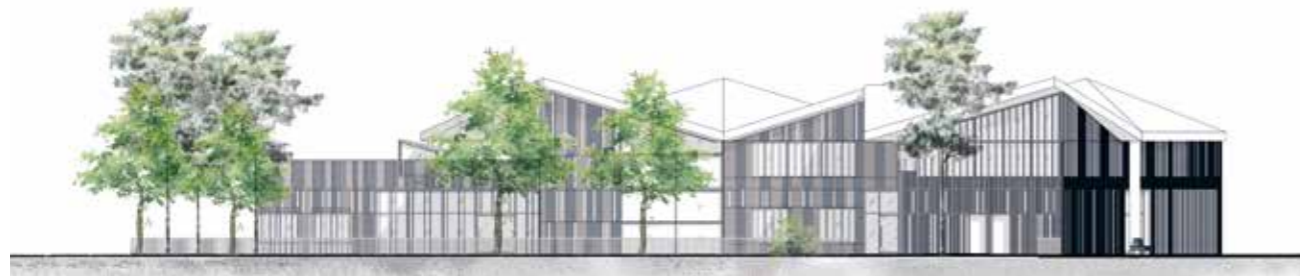
First floor



North facade



West facade



North elevation



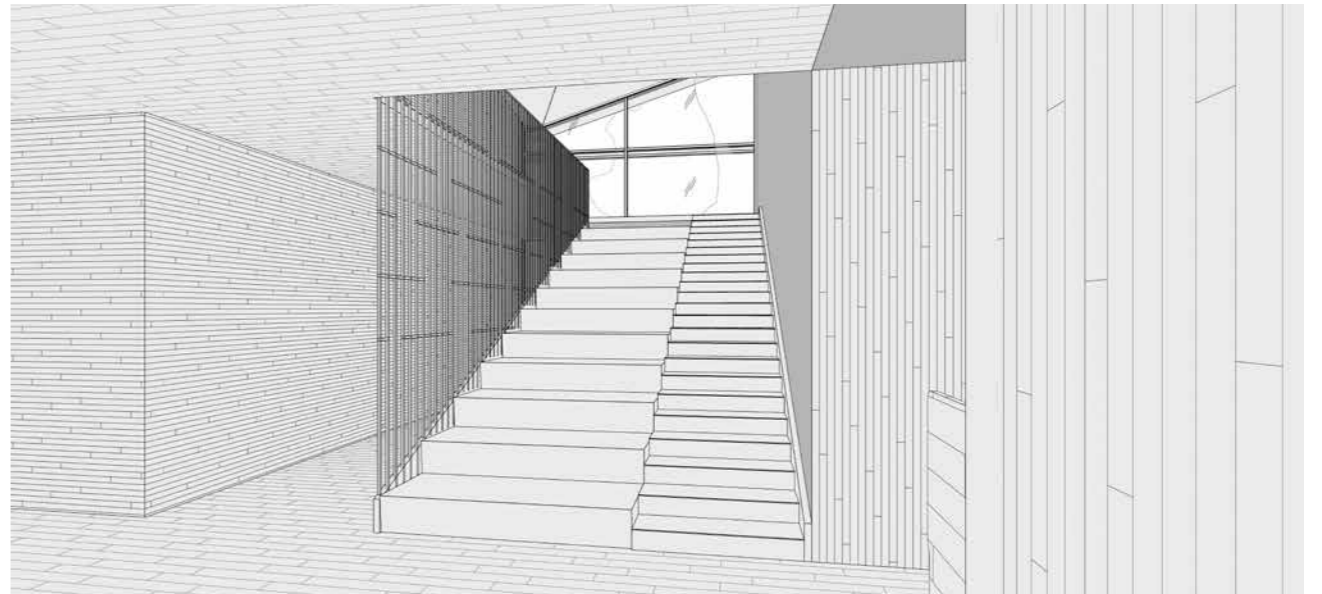
South elevation

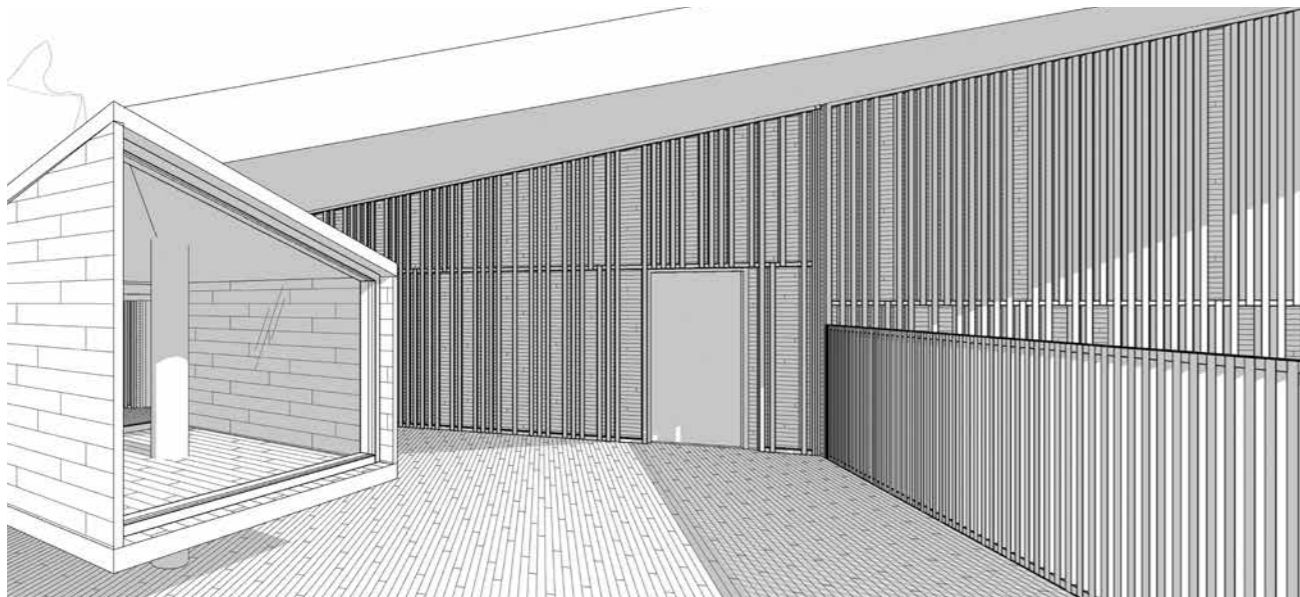


Children's kitchen with canteen



Stairs are accessible for adults and children alike







Cycle of Nature A Forest Kindergarten

Jayalashni Vallath Nikitau



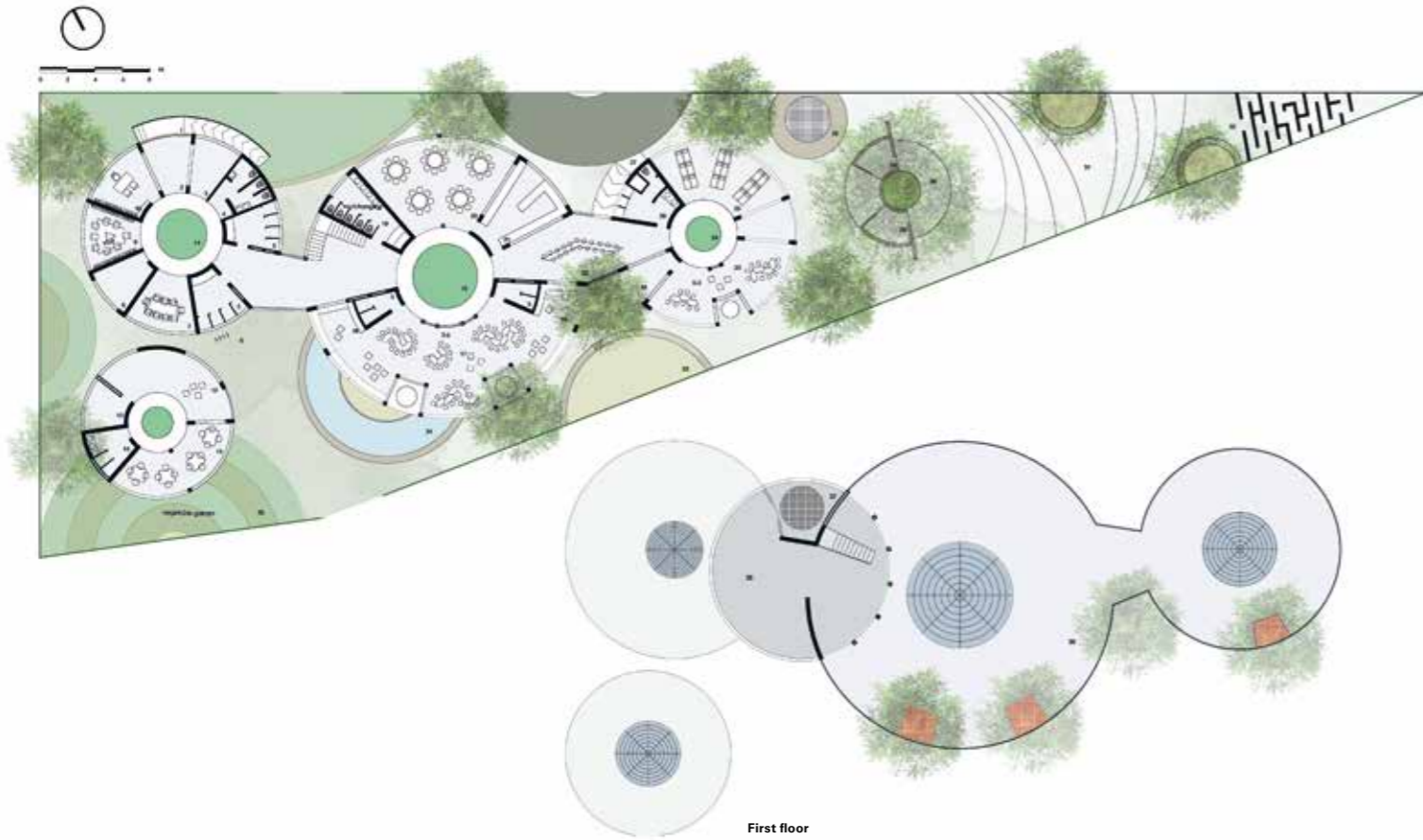
Are we raising a generation of nature-phobic kids?

Over the last few years, there has been a lot of focus on identifying and overcoming the barriers that are preventing children from connecting with nature. There has been a big push to get kids outside and playing, and this movement has been supported by many groups worldwide. Family nature clubs, nature preschools, nature playgrounds, school garden programmes, and summer nature camps are some of the ways in which communities are working together to encourage connections to nature:

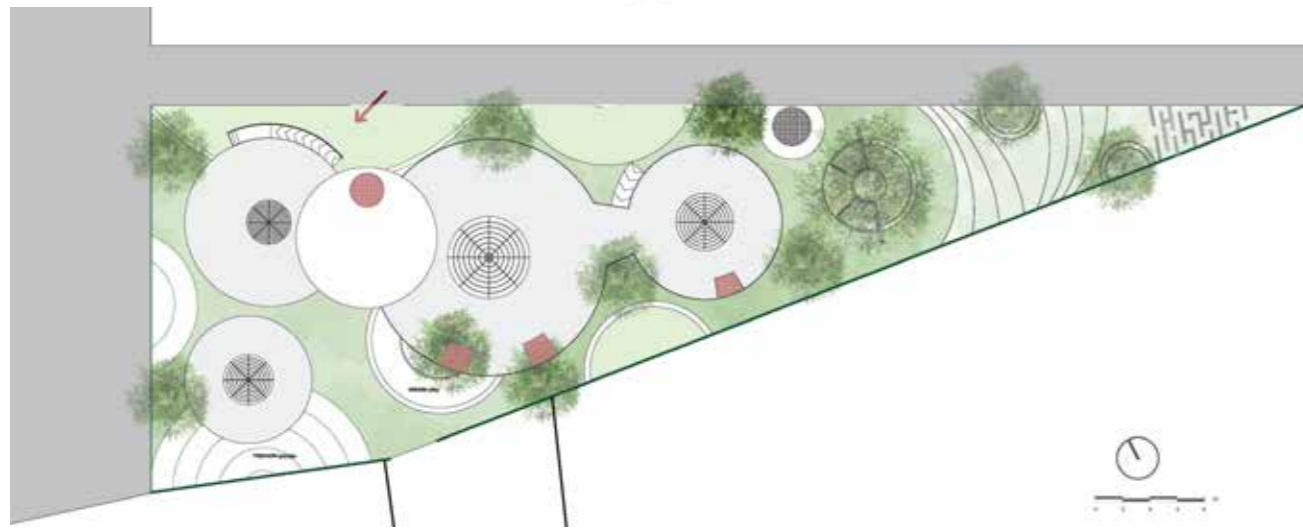
- encourage participation in outdoor activities
- learn together outdoors
- experience social interaction in nature
- try to accommodate children in nature
- let children experience nature, daily, from birth
- allow children to get messy, splash in puddles, climb trees, play with sticks, and watch bugs
- let children become familiar and comfortable with the natural world
- conquer fear in nature
- be open minded for a healthy interactive life
- learning without boundaries



Foto: Meinzahn



First floor



Site plan



North elevation



North elevation

North elevation



South elevation

North elevation



Site plan

Perspectives



Nature Lab for Kids Urban Generation Kindergarten

Daniel Andres Ramon Fernandez



Nowadays, we live in a society ever more distanced from our roots. The Nature Lab project seeks to promote a sense of permanence within nature, through a transition (bridge) between the community located to the north of the project and the forest and lake situated at the southern limit.

Erkner has an interesting demographic: 33 per cent of its population is over 60 years old, that being the most predominant group of people living in the city. Thus, this project explores the integration between the elderly and children. It creates new kindergarten typology, where, despite the age difference, there is a feasible complementary relationship between the groups. Children learn from the experience of the elderly, and in turn the elderly are able to play an active part in society, which might increase their happiness and prolong their lives. Therefore, this is a socially viable project inspired by the nature of its environment. It promotes learning through nature, which is undoubtedly our greatest teacher.

What task I have set myself?

How a kindergarten typology can integrate and shape urbanisation for children and elderly persons by learning from each other.

What contribution do I seek to make through my design?

A contribution to the idea of a »family centre« and how it is related with the social issues.

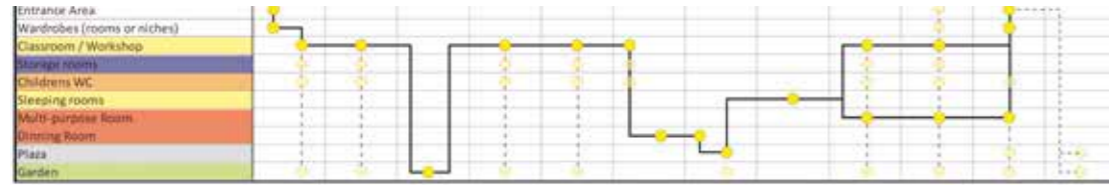
What is the nature of my interest?

To find something bigger than myself; nature helps to put problems into perspective and it is a relief to be away from the and stress of modern day living.

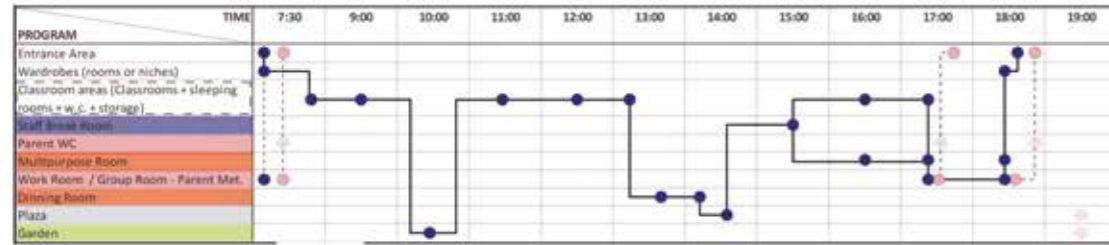
Therefore I am very inspired by nature and human relationships. The research should lead to benefits for children and nature.

I think that formulating these three questions at the beginning of my design was a key factor in keeping the ideas and goals clear.

Children

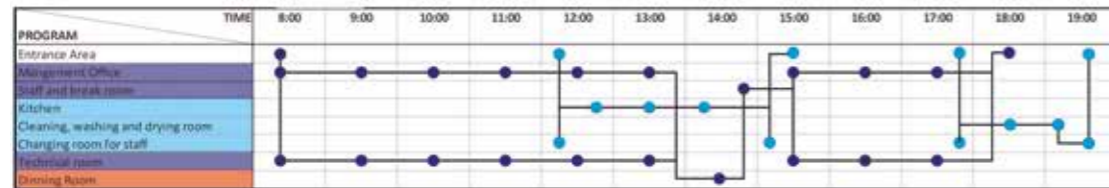


Teachers, staff and parents



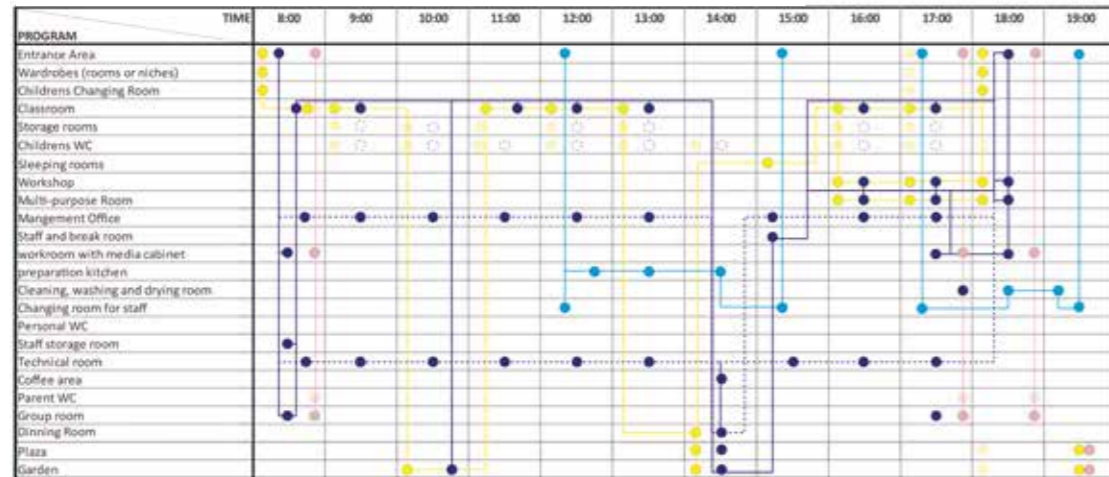
● Teaching staff ● Parents

Administration and service (staff)



● Service staff ● Administration staff

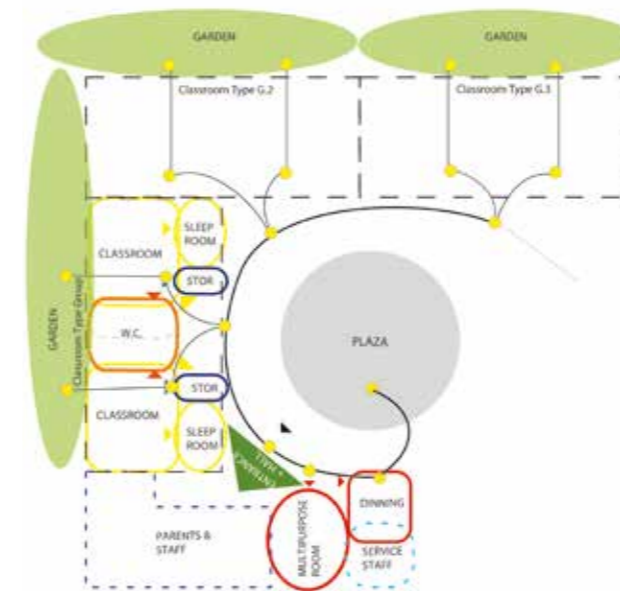
Results



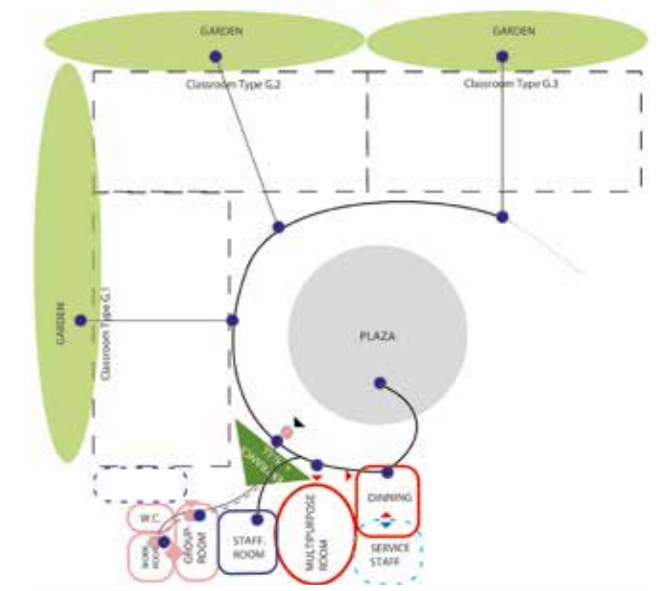
● Children ● Teaching staff ● Service/Staff ● Administration/staff ● Parents

Flow Analysis

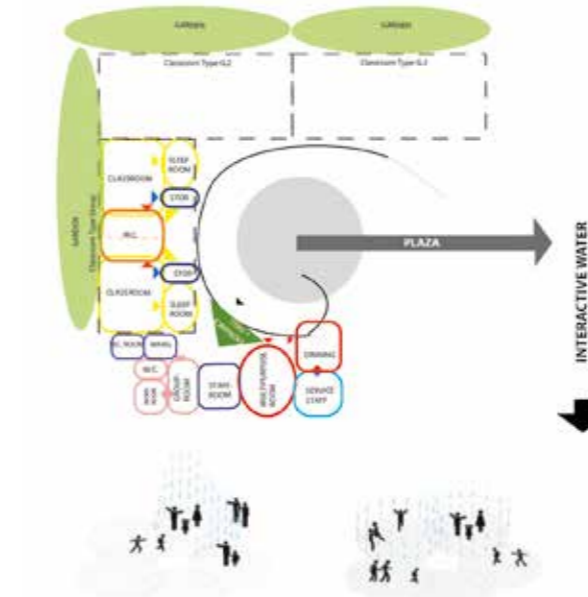
Children



Teachers, staff and parents

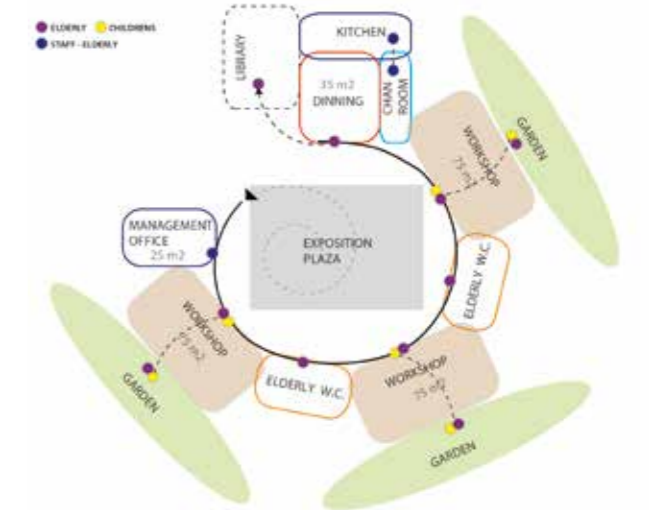


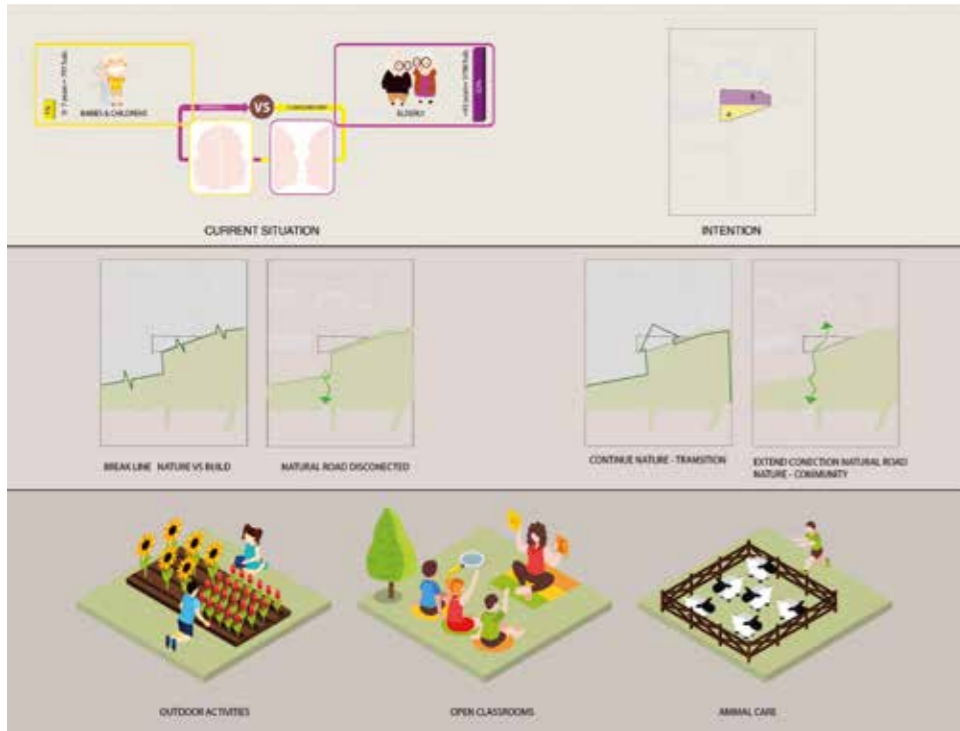
Programme analysis Kindergarten facilities



A playful water fountain on the plaza, controlled by sensors that capture the movement. Water disappears when the visitors get close.

Programme and flow analysis Elderly facilities





Design task



Intergenerational interactions



Generation sharing (infinity)



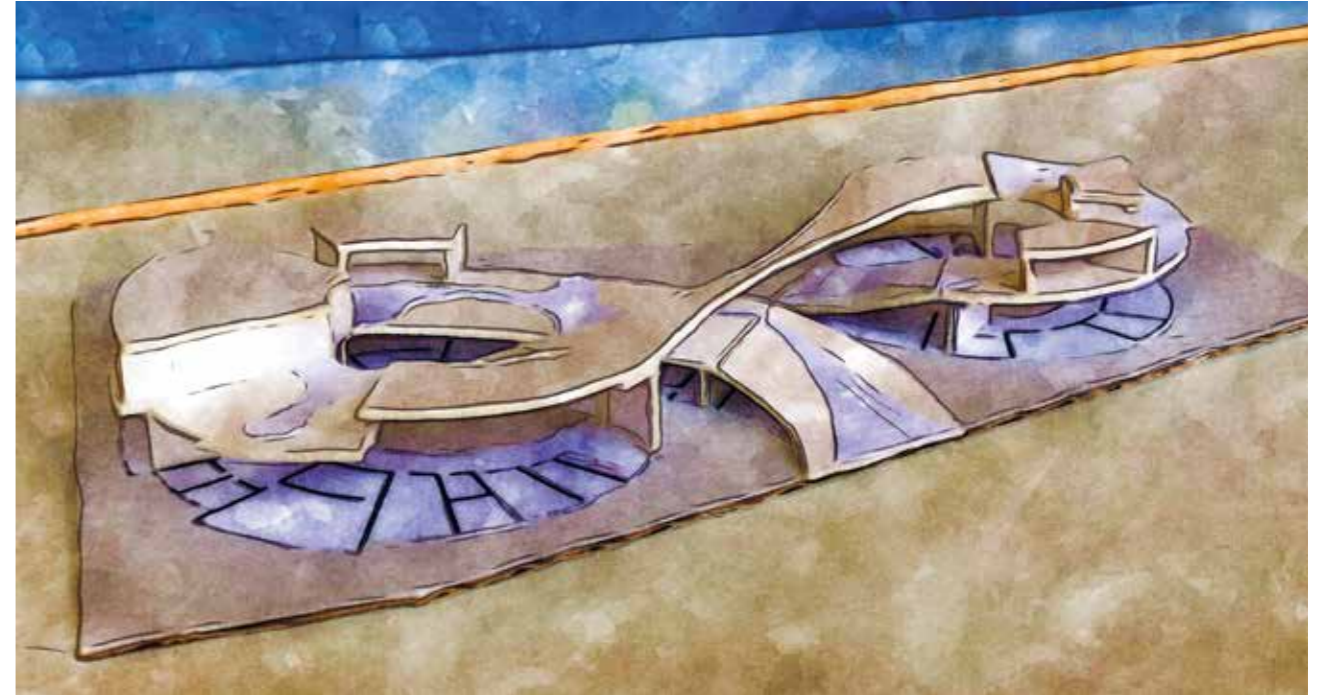
Nature learning generation



Generation of gardeners



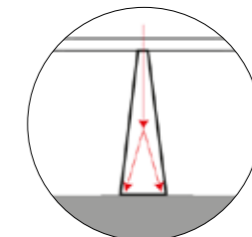
Generation sportive



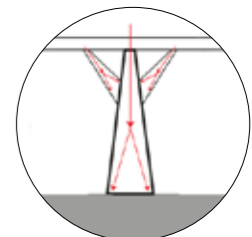
Model

The design for the two new community buildings is an extruded infinity symbol that creates a two-storey kindergarten building and an »Elderly Activity House«, looping together a village of learning facilities around two courtyards. A garden sits at its heart, positioned at the intersection within the figure eight. Externally, the biomorphic form is articulated as a singular gesture with a different

inner and outer skin. Internally, the buildings have their own distinct characters. The looping circulation spine continues on the roofs, which can be used for different activities, such as outdoor play, sports, gardening or recreation. The fluid form not only tackles the challenges of the site, but also generates complex spatial opportunities that provide a provocative learning environment.



Structural principle

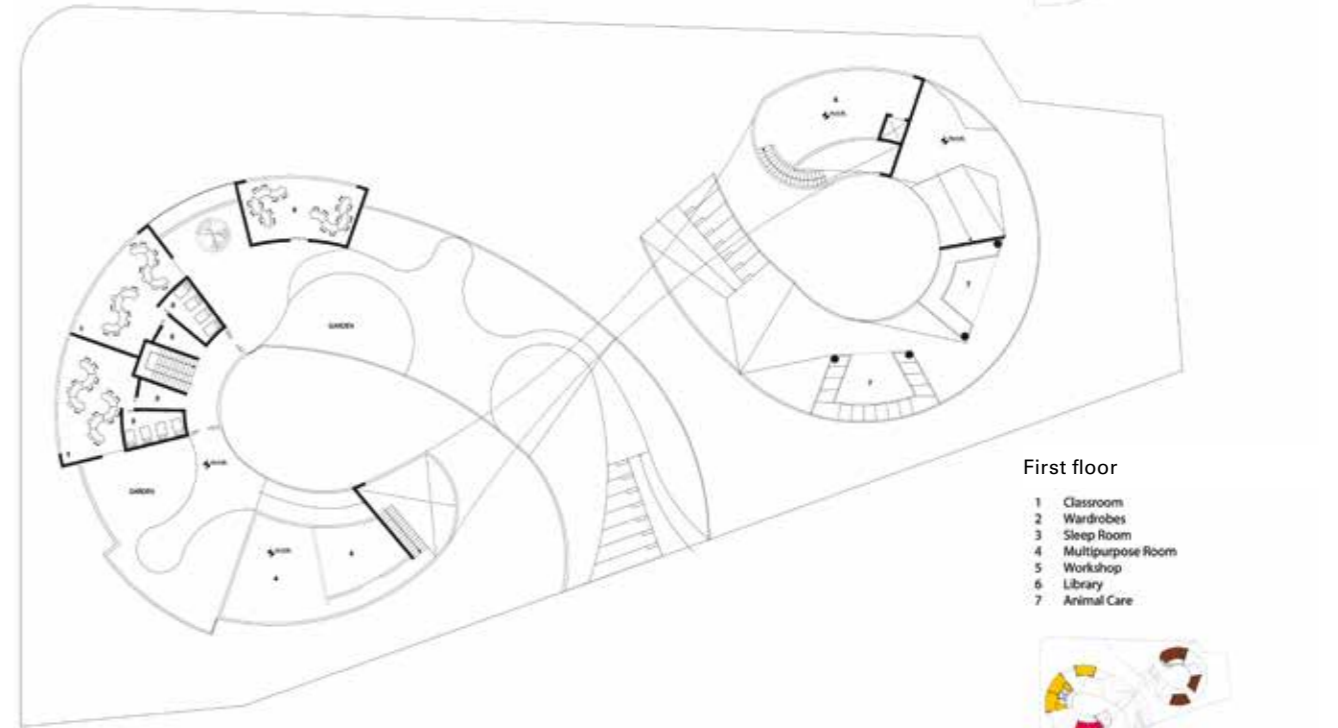
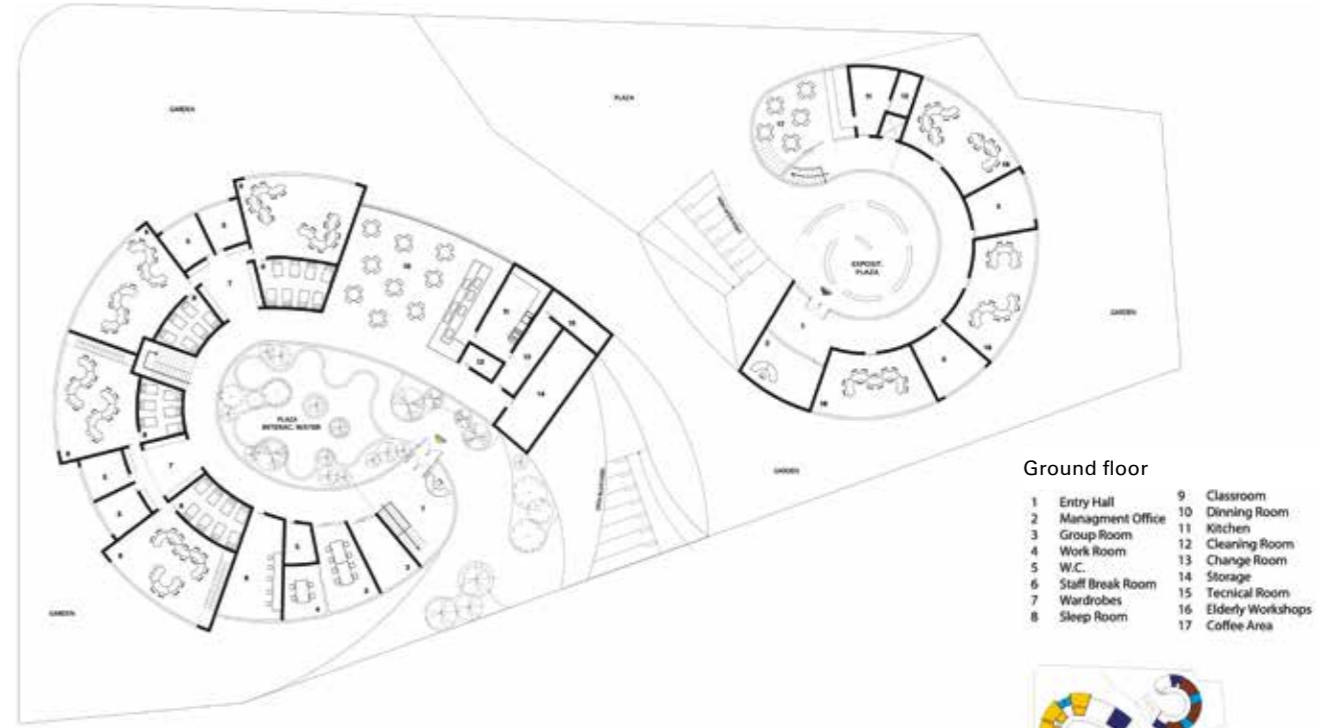


Functional principle



South elevation

Site plan





Open Modularity

How Freedom of Space Affects the Way Children Learn

Antonio Herrera



Transparent Guidance

Learning in children can be acquired in many ways but it invariably requires a guide along the way. A building also always has elements that guide you, elements that you can see and that you lead to a specific place. The concept of transparency within the building makes it possible for children to explore the spaces in a free way, to have a vision about what there is on the other side of each space.

Cluster

One of the design ideas is to have clusters that group the children and services to concentrate the most-used areas and to have control in the classroom and administration space. This facilitates the organisation of the space. The clusters are repeated symmetrically on the first and second levels, with slight variations to generate intermediate spaces. They are always visually connected.

Tower

The location of the project makes it necessary to have views towards the nearby lake. One of the design ideas is to have a kind of gazebo for the children. This space is on the top level of the building and has a window to the south that frames the natural surroundings, linking to a terrace. It uses the roof space as a playground and makes a visual connection with nature at the highest part of the building.



East elevation



West elevation



South elevation



North elevation



Ground floor

Ground floor

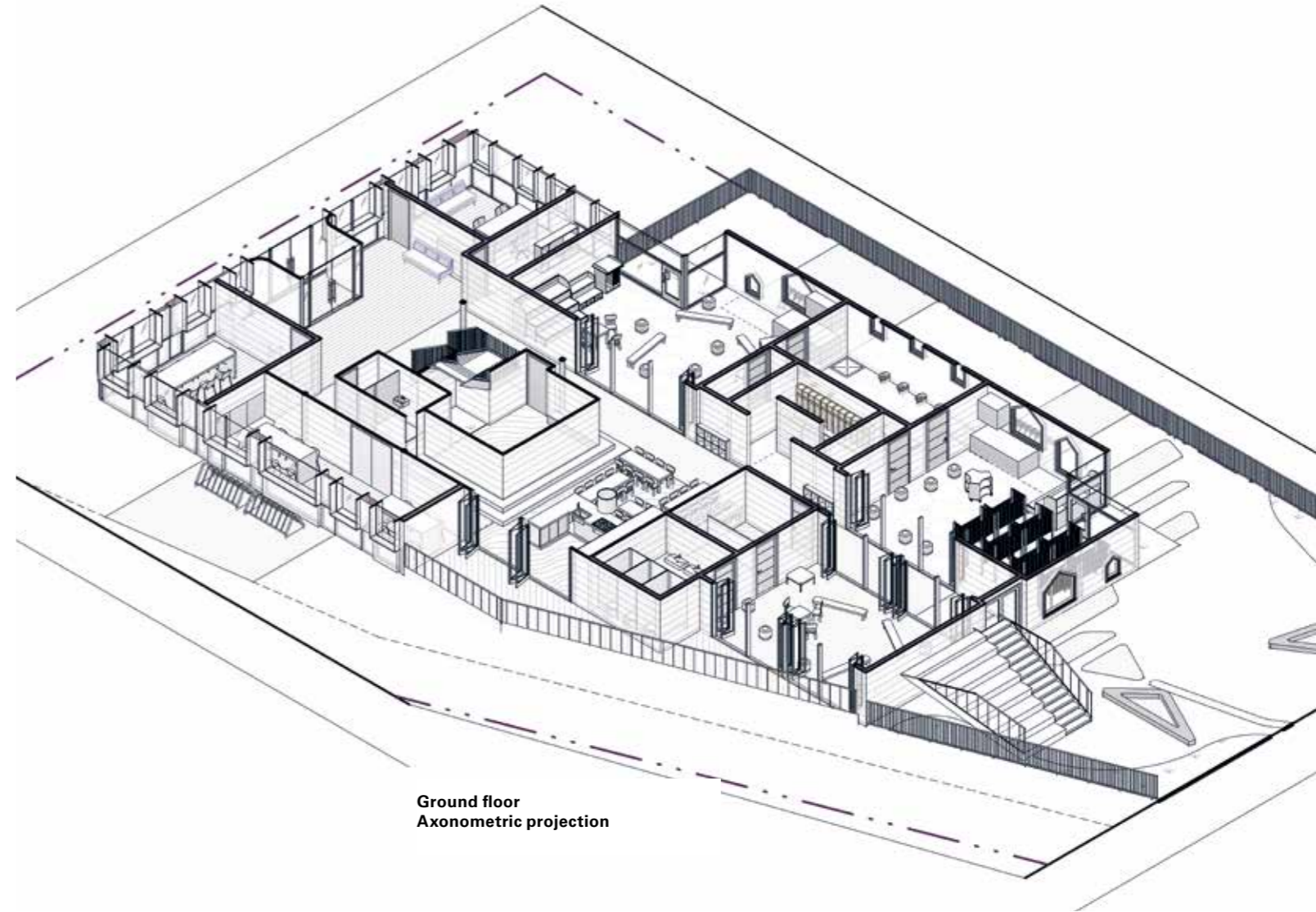
- 1 Classroom
- 2 Classroom
- 3 Storage room
- 4 Storage room
- 5 Classroom
- 6 Group Room parents
- 7 Coffee Area parents
- 8 Pram storage room
- 9 Management office
- 10 Wardrobes
- 11 WC children
- 12 WC visitor
- 13 Kitchen
- 14 WC children
- 15 Wardrobes
- 16 Storage room
- 17 Storage room
- 18 Technical room
- 19 Entrance area
- 20 Classroom
- 21 Storage room



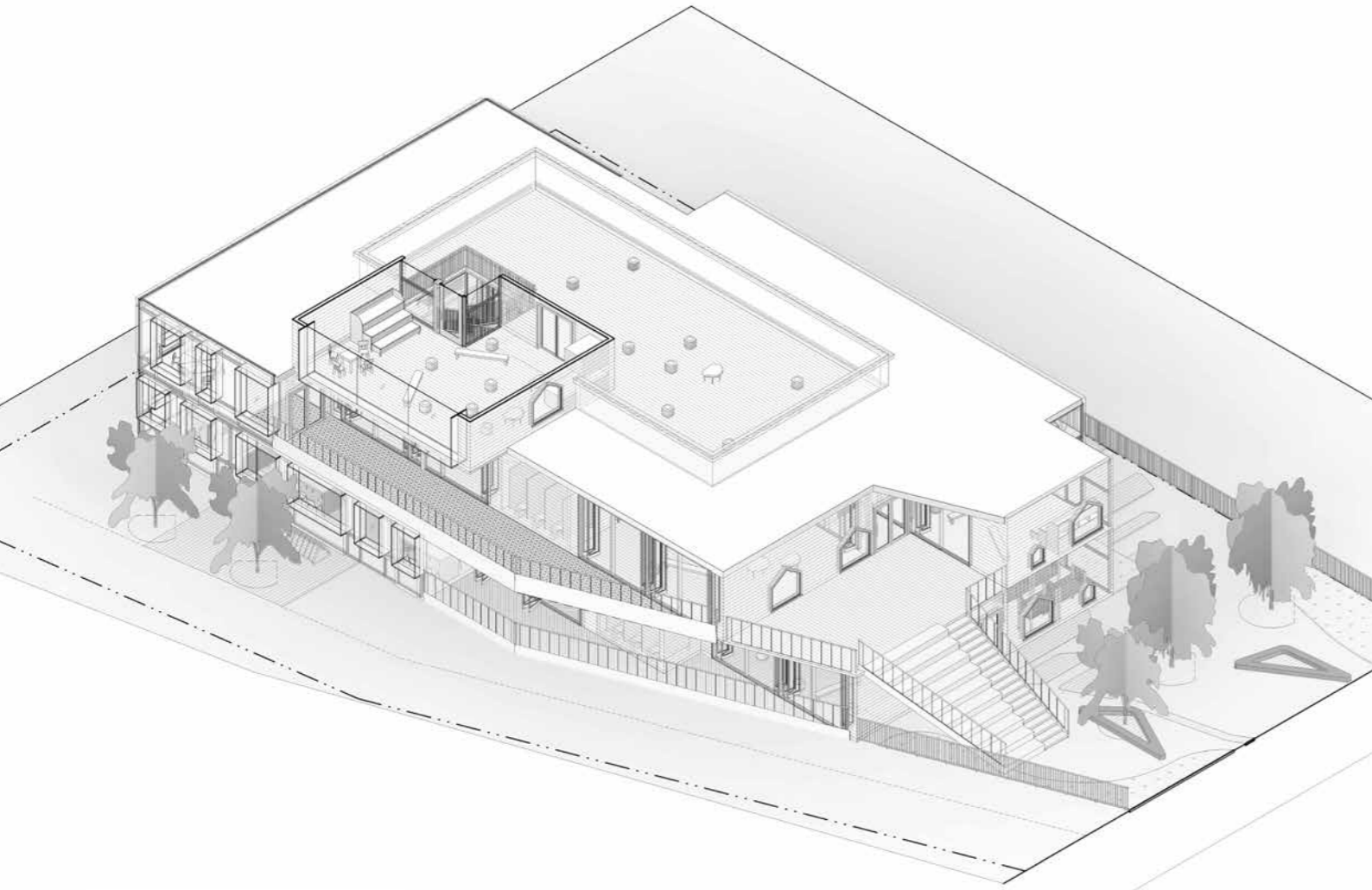
First floor

Second floor

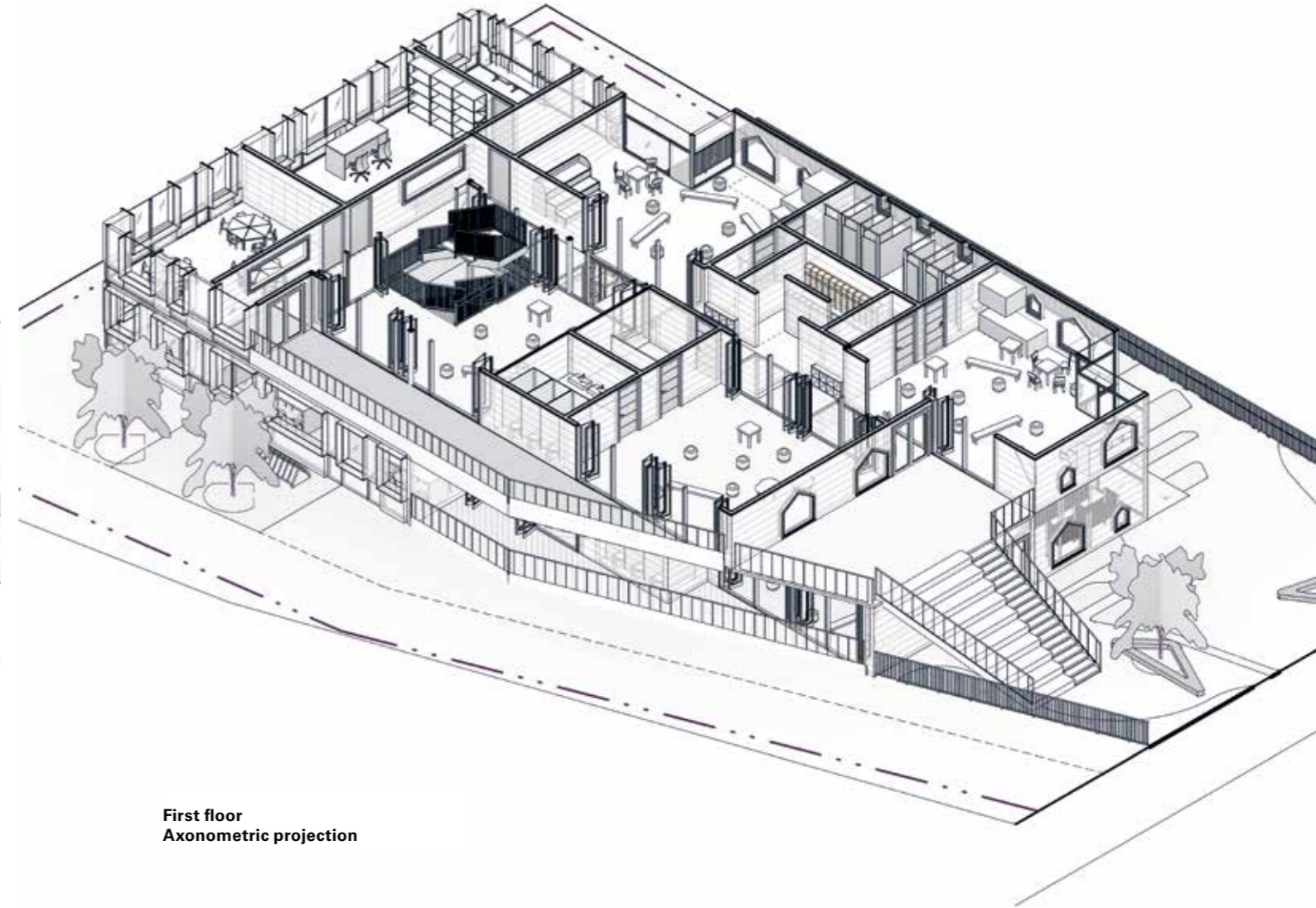
- 22 Classroom
- 22 Classroom
- 23 Cleaning room
- 24 Staff and office
- 25 Storage room
- 26 Storage room
- 27 Changing room
- 28 Workshop
- 29 WC children
- 30 Wardrobes
- 31 Storage room
- 32 Multipurpose
- 33 WC children
- 34 Wardrobes
- 35 Classroom



Ground floor
Axonometric projection



Roof garden
Axonometric projection



First floor
Axonometric projection



The Box Modular Buildings for Kindergartens

Ibrahim Abdelmonem



The Box

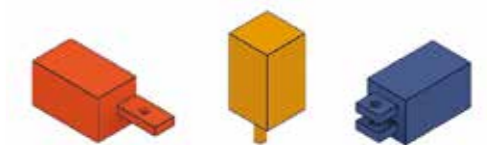
The building form started off as a box, as it is one of the easiest forms to be comprehended by the child. Inside, a child can easily navigate their way. The form was turned into a more rectangular volume, with the long side along the water view to provide the maximum amount of views onto the nearby lake.

The Courtyard

The courtyard is a focal point at the heart of the kindergarten. There, it can be used as an extension to the surrounding spaces. It also acts as a centre point for various types of gatherings, where the children come together to play, socialise, connect and collaborate.

Flexibility

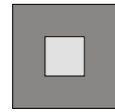
According to statistics, the birth rate has changed greatly in different periods. Because of this and the fast pace of life in our ever-changing environment, our buildings should be adaptable to these needs. The design addresses this by choosing a structural system that allows additions and reductions with ease. To make the building as open as possible from the inside, the design included a wall partition which can be used as a whole unit to serve all the basic functions. This allows more space for other activities, while also making the other walls flexible and non-permanent.



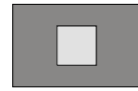
Form Development



Basic box



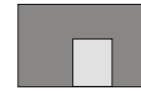
Centred courtyard



Stretched along the water side to give more space and better views



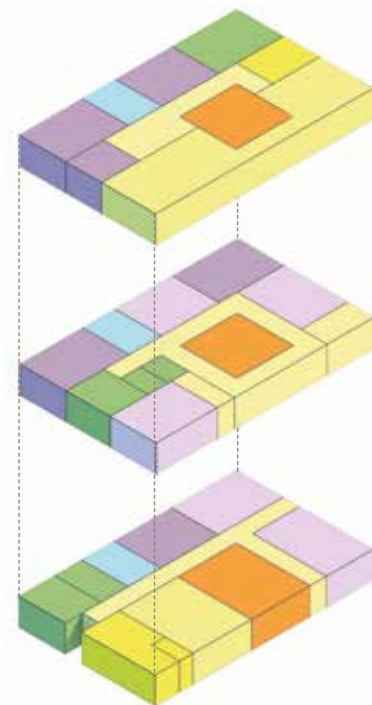
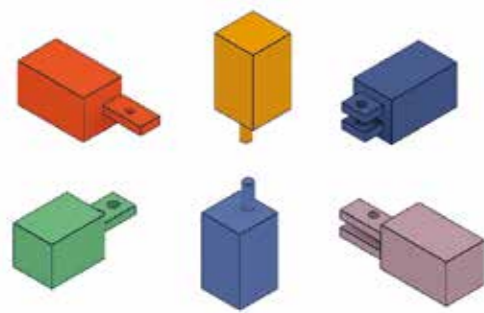
Courtyard opens towards exterior



Courtyard moves eccentrically to give more flexibility



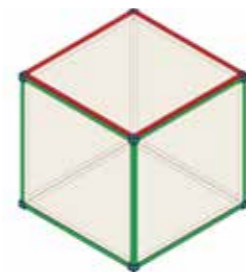
Simple floorplan that is easy for children to understand



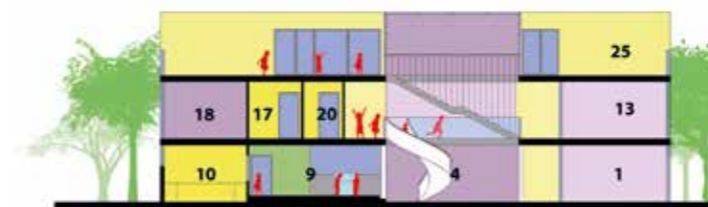
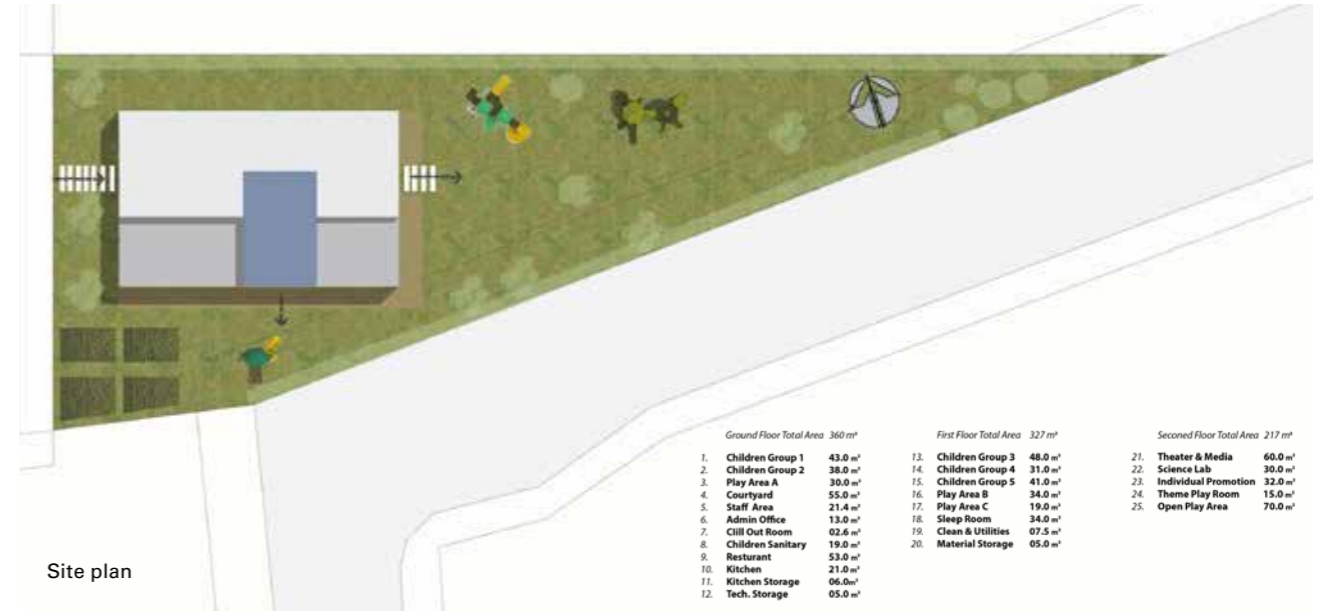
Second floor

First floor

Ground floor



Modular units are flexible both in dimension and materials. They can serve as larger classrooms, complete schools, add-on classroom spaces, kindergartens, and playrooms or have other educational applications.



Section A



Section B



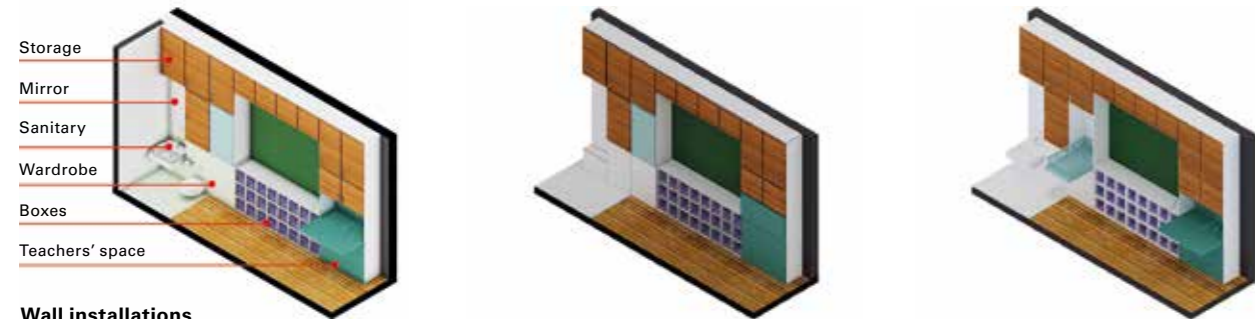
Ground floor



First floor



Classroom



Wall installations



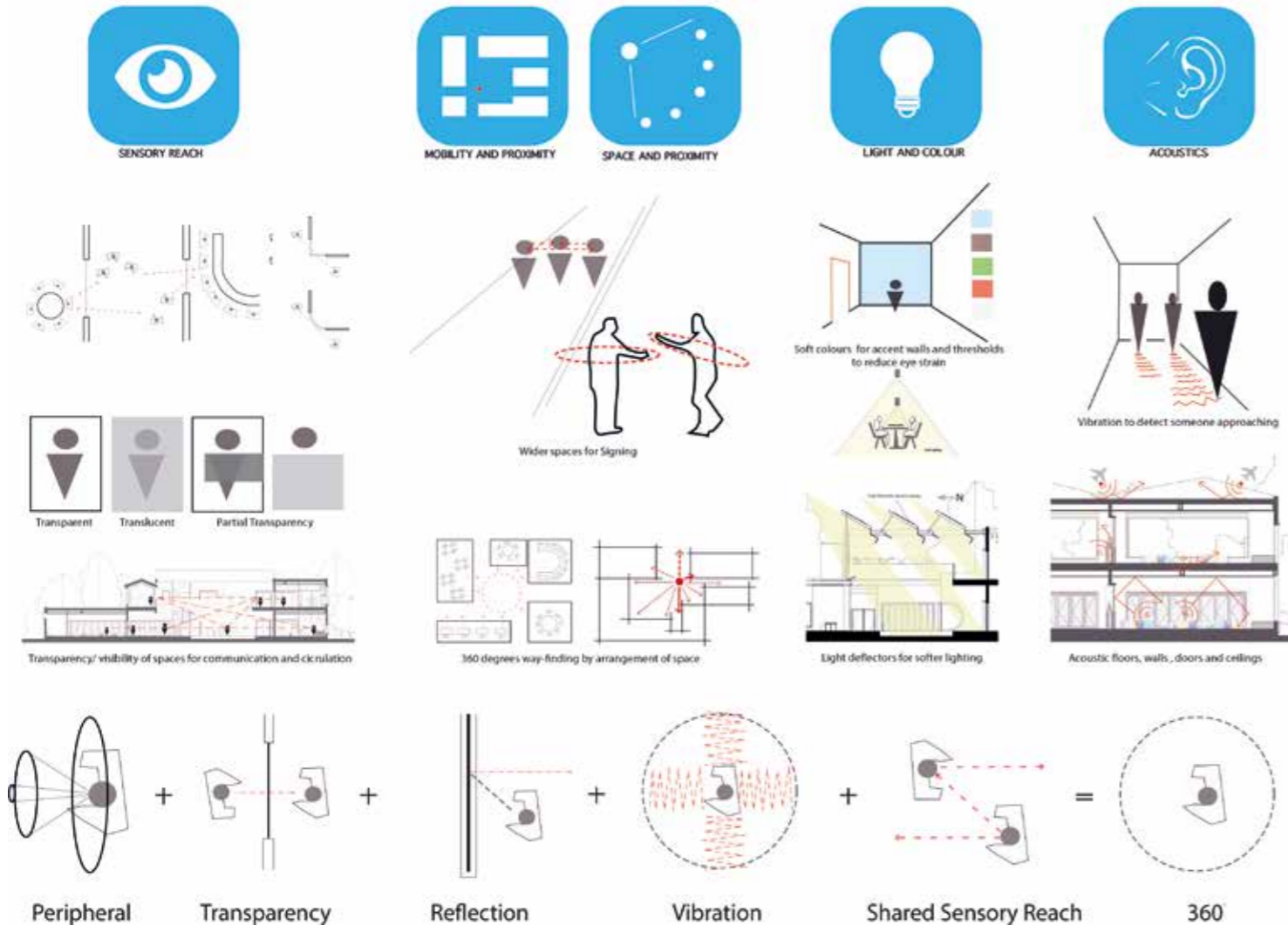
Wall separations



Elevations

A Sound Education Universal Design for Deaf and Hearing Children

Eicy Babb



The concept of this project is based on my affinity for communicating with deaf people, and on the work of Hansel Bauman and Dangermond Keane for their DeafSpace project at Gallaudet University, Washington, DC. After a period of research, I extracted three parameters (Perception, Integration and Specification) and designed a kindergarten where children, teachers and parents can learn from each other.

Perception: Influenced by the way deaf people perceive sound, I wanted to design a space that would stimulate learning for children through sound, light, form and colour, all translated architecturally.

Integration: The building mixes deaf and hearing children to remove communication barriers by creating a collective environment through Universal Design. Hearing children will have the chance to learn sign language and develop visual senses while deaf children become more socially accepted.

Specification: This focuses on sustainability, accessibility, ergonomics, visibility, acoustics, light and colour. Such specifications have been researched by Hansel Bauman and Dangermond Keane.

In addition to spatial orientation, using elements that improve the visual awareness of the surroundings should be considered. This can be done through the placement of windows and doors, the use of transparent or partially transparent doors and using con-

cave reflective surfaces at the top corners of a room. Circulation is particularly important as the hearing-impaired are highly visual people. One must consider, clear lines of site for way-finding, wider corridors for communication, and transparency on crucial corners.

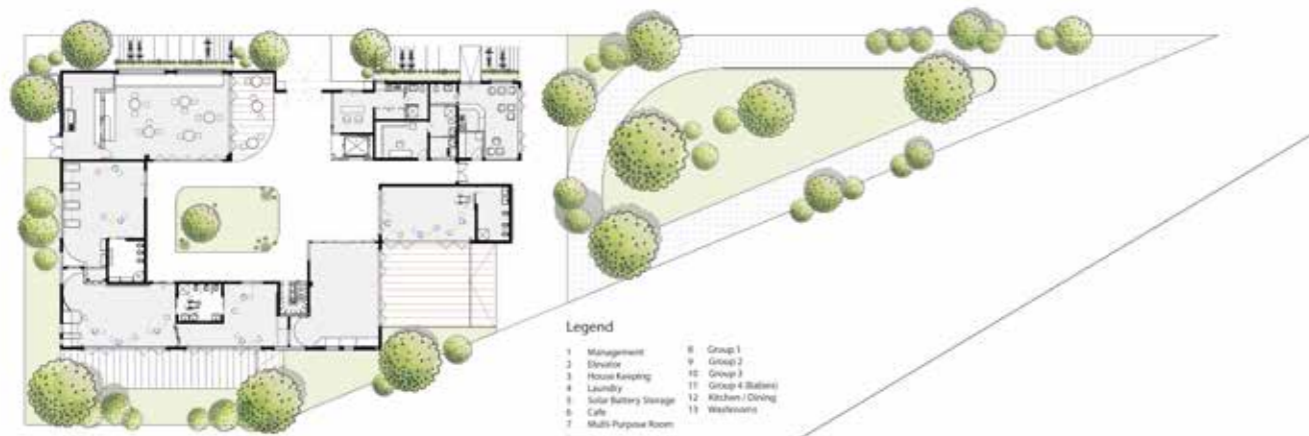
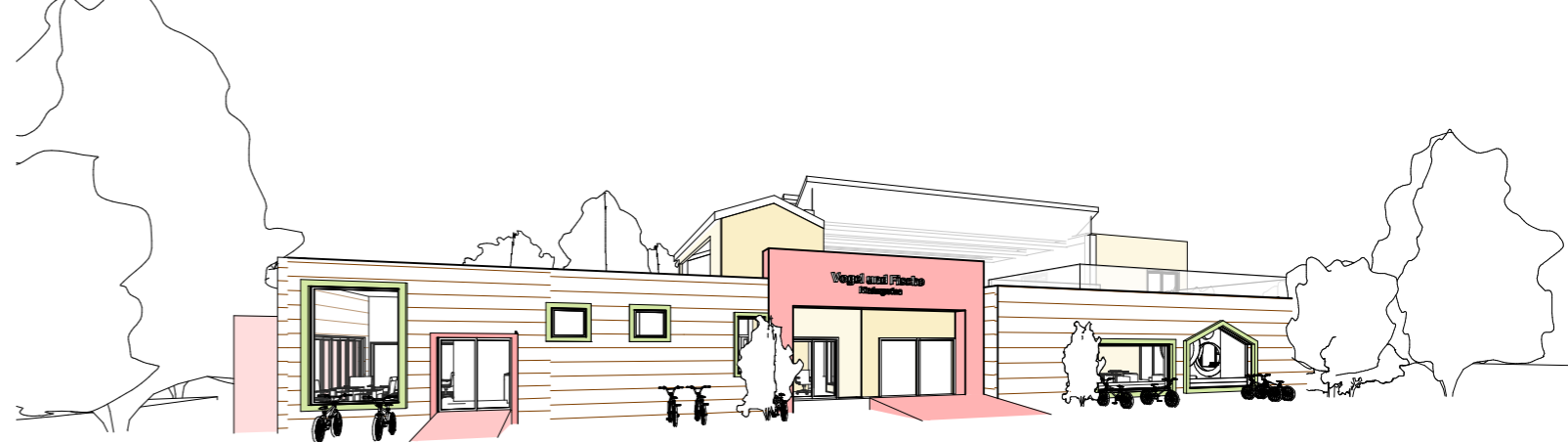
In group settings, there needs to be enough space to sign in group settings. There should be a comfortable distance between individuals to accommodate hand gestures, as well as to include more persons within a group. As face to face communication is necessary, curved or collective furniture arrangement is most suitable.

Light and colour are key in the design, as it is important to avoid eye strain. This can be achieved through the use of gentle colours, as well as controlled sun glare using light deflectors in both windows and light-wells. Colour is also necessary for threshold indicators, e.g., ramps, stairs and doorways. Light falling on the face of the person signing is necessary; their positioning in a room can strengthen or weaken communication.

Echoes can be distracting for a person with hearing implants. Thus, insulation should be implemented in walls, floors and ceilings, and materiality plays a key role in this. Soft surfaces and furniture aid in the quality of the space, and hard surfaces (wood floors) should have acoustic underlays to control reverberations.



North Elevation M 1:200



Legend

- | | |
|-------------------------|---------------------|
| 1 Management | 8 Group 1 |
| 2 Elevator | 9 Group 2 |
| 3 House Keeping | 10 Group 3 |
| 4 Laundry | 11 Group 4 (Babies) |
| 5 Solar Battery Storage | 12 Kitchen / Dining |
| 6 Cafe | 13 Washrooms |
| 7 Multi-Purpose Room | |

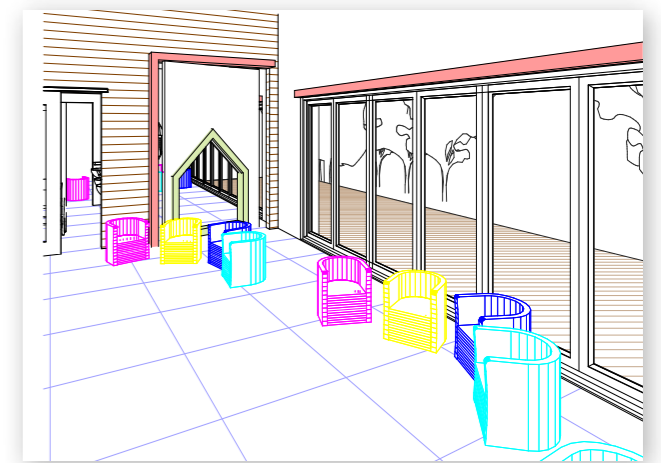
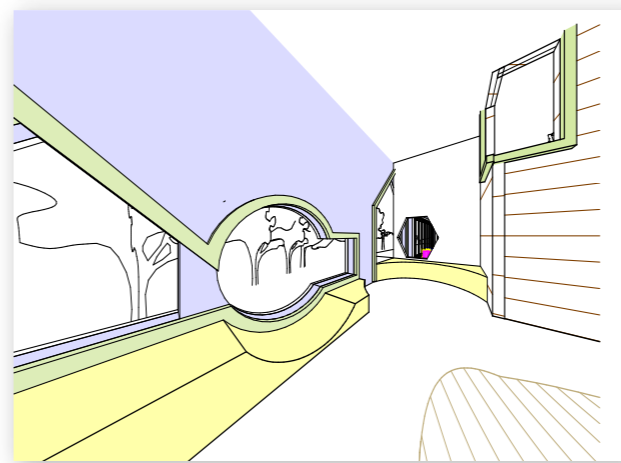
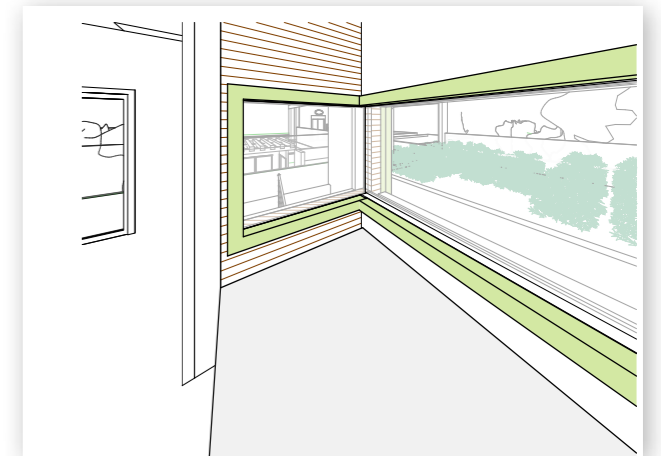
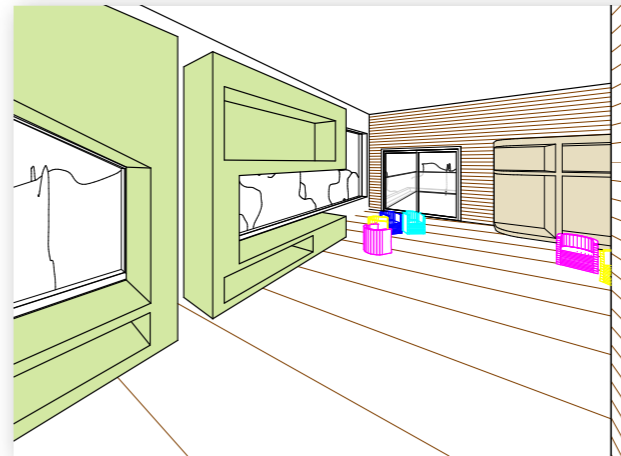
Ground Floor M 1:200



Legend

- | | |
|---------------|---------------|
| 1 Elevator | 5 Group 5 |
| 2 Group 5 | 6 Group 6 |
| 3 Group 6 | 7 Group 7 |
| 4 Group 7 | 8 Roof Garden |
| 5 Roof Garden | 6 Washrooms |

Second Floor M 1:200





Exhibition boards
130 x 220 cm

Since 2016, in cooperation with archives, public and scientific institutions, semester documentation of the subject interior planning. In the handy square format, topics are discussed in two languages. The students develop different approaches to documentation as archiving and communication tools and learn well-grounded public relations work for architects. 210 x 230 mm, approx. 144 - 190 pages, softcover.



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 Workshop

Further Reading

Further Reading

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Danilo Suhrweier, architect MA, born 1982 in Berlin. Member of the Berlin Chamber of Architects. Many years of professional experience and commitment in the field of social and special education. Studied Architecture at Beuth University in Berlin and at the Waterford Institute of Technology (WIT) in Ireland. Head of the construction and project management department of the FRÖBEL Group, with a focus on buildings for children.

Andrea Männel, interior architect BDIA, born 1984 in Freiburg. Studied at Hochschule Trier. Since 2012 working as an interior designer in Berlin, since 2014 with her own practice. Member of the board of the Berlin Chamber of Architects (since 2017). Freelance for the FRÖBEL Group (since 2018). Main areas of work: conception of new construction, reconstruction and extension, especially for day-care centres, project management and development of new design approaches.

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 Ee Tian Lau
 Nicole Hooi Yi Tien
 Joyce Wee Yi Qin
 Jin Chung Wei
 Zhen Fai Wong



Nicole Hooi Yi Tien



Jin Chung Wei (Megan)



Joyce Wee Yi Qin



Polina Shvets



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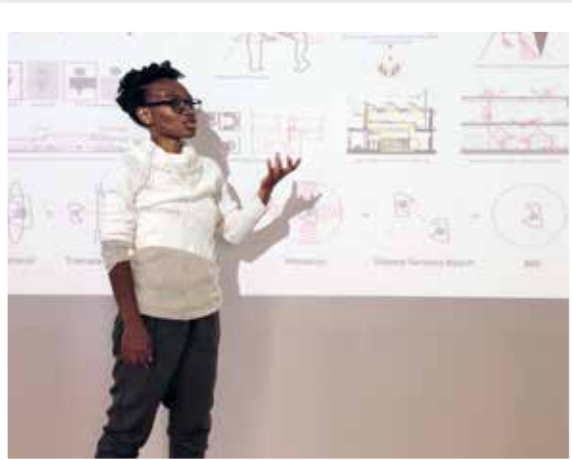
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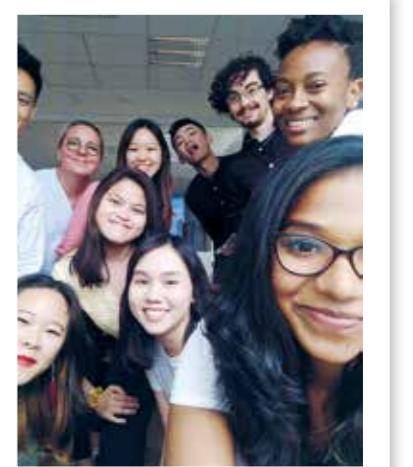
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