



EXPLORATION AND AUTONOMY
WILD CHILDREN IN THE CITY

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Wild Children In The City

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A thesis submitted in partial fulfillment of the requirements for the degree Master of Design in Interior Studies [Adaptive Reuse] in the Department of Interior Architecture of the Rhode Island School of Design

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*May you always see the world
through the eyes of a child.*

ABSTRACT

From 1980 to 2000, China adopted a teacher-centered kindergarten model with the main purpose of imparting knowledge, leaving children in a passive learning environment. Since 2001, this system's adverse impact on child development has become clear to preschool educators. As a result, teachers have begun to consider kid-friendly environments and games. However, even these games were arranged with a top-down, teacher-centered structure.

An education revolution has emerged that aims to release the freedom of children by prioritizing their needs, paying respect and trust to exploration, as well as giving children choice. One pioneering philosophy applying this principle is Anji Play, an internationally recognized early childhood curriculum developed and tested over the past 15 years. Through

open-ended and self-determined play in a natural, open, variable, and diverse environment, Anji Play has proven to evoke children's exploration spirit, encouraging autonomy and bringing children a sense of belonging. Yet, its development has been hindered in high-density cities because the system relies upon outdoor space.

Child development is impacted by the architectural environment. This thesis argues that it is possible to radically shift the perception of scale in urban sites such that they approximate the potential for exploration and autonomy in natural areas. The main architectural strategy is to increase the spatial perception of the activity area by blurring the boundary between indoor and outdoor with natural elements, such as vegetation, wind, and sunlight. The spatial experience is further enhanced by big loops

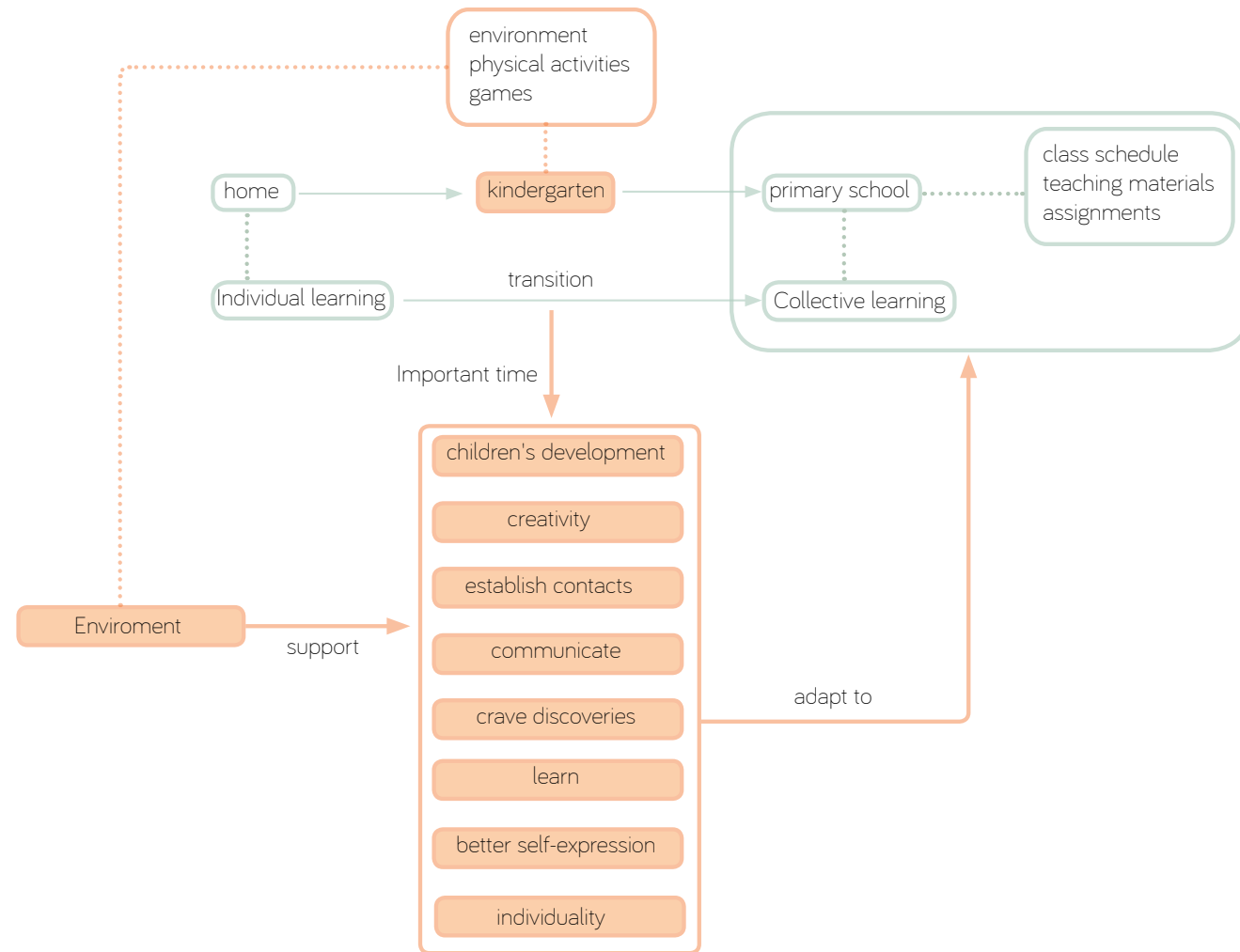
circulating through each floor, with staggered stairs and small loops connecting each room with variable partitions. A sense of belonging can be created by an integrated open scheme that encourages users to keep contact with their surroundings and feel free to shape their environment. Ferns sway and the wind pulls a raucous group of wild children into a gallop from room to room, but they don't know if they are outside or in.

BACKGROUND

Environment play a vital role in Kindergarten

3-6 years old is an important period for children's development. During this time, they gradually transit from family-based individual learning to collective learning through physical, cognitive, emotional, and social development. This has played an important role in adapting to primary school.

Different from primary school and middle school, criterion of preschool education is not in the class schedule, teaching materials or assignments. It is more based on environment, games and activities. Environment plays a vital role in children's development. A good environment can support children's development, their creativity, their ability to establish contacts, to communicate, to crave discoveries, and to learn. Such spaces also allow for better self-expression and individuality, as opposed to traditional institutional learning patterns.



From 1980 to 2000, China adopted a teacher-centered kindergarten model with the main purpose of imparting knowledge, leaving children in a passive learning environment.¹ Since 2001, this system's adverse impact on child development has become clear to preschool educators. As a result, teachers have begun to consider kid-friendly environments and games. However, even these games were arranged with a top-down, teacher-centered structure.

An education revolution has emerged that aims to release the freedom of children by prioritizing their needs, paying respect and trust to exploration, as well as giving children choice. One pioneering philosophy applying this principle is Anji Play, an internationally recognized early childhood curriculum developed and tested over the past 15 years. Through open-ended and self-determined play in a natural, open, variable, and diverse environment, Anji Play has proven to evoke children's exploration spirit, encouraging autonomy and bringing children a sense of belonging.



learning-oriented: No play teacher-centered

Teachers think that increasing the time of playing games means wasting the time of learning knowledge



ANJI PLAY self-determined play: TRUE play child-centered

Self-initiated, self-determined play, reflection and self-expression. Allow children to explore, create, and autonomy.



teacher-determined play: false play child-centered?

It seems to be based on the children's preferences but it's actually designed to cater to the adults. All the games and activities are arranged by the teacher.

1. Elkind, David. *Miseducation: Preschoolers at Risk*. New York: Knopf, 2006.

LITERATURE REVIEW

ANJI PLAY PHILOSOPHY

Anji Play is the internationally recognized philosophy and approach to early learning developed and refined over the past 18 years by educator Cheng Xueqin. Anji Play redefines the relationship between learners and systems of learning through reflective systems founded on the discovery of the true capacity of the learner¹.

Principles

Love



Fig 2.1

Bonds of trust and respect between children, their teachers, families, and the environment. The safety to take risks.

Joy



Fig 2.2

The reward of self-determined discovery, growth, and learning.

Engagement



Fig 2.3

The outcome of joyous, uninterrupted exploration, inquiry, self-expression, and reflection.

Risk



Fig 2.4

The experience of physical, intellectual, social, and emotional learning that takes place when we are uncertain about an outcome and make an attempt.

Reflection



Fig 2.5

The self-guided understanding, expression, and development of complex thinking. The process by which experience becomes knowledge.

4 1. "Anji Play." Anji Play. Accessed March 29, 2020. <http://www.anjiplay.com/#anjiplay>.

Material and Environment



Fig 2.6

Minimally-structured, open-ended

Minimally-structured, open-ended materials of all sizes, drawn from life. Allow children to explore, imagine, and create. Such as ladders, planks, oil drums, boxes, bricks and rope. The large size materials also encourage children to cooperate and help each other.



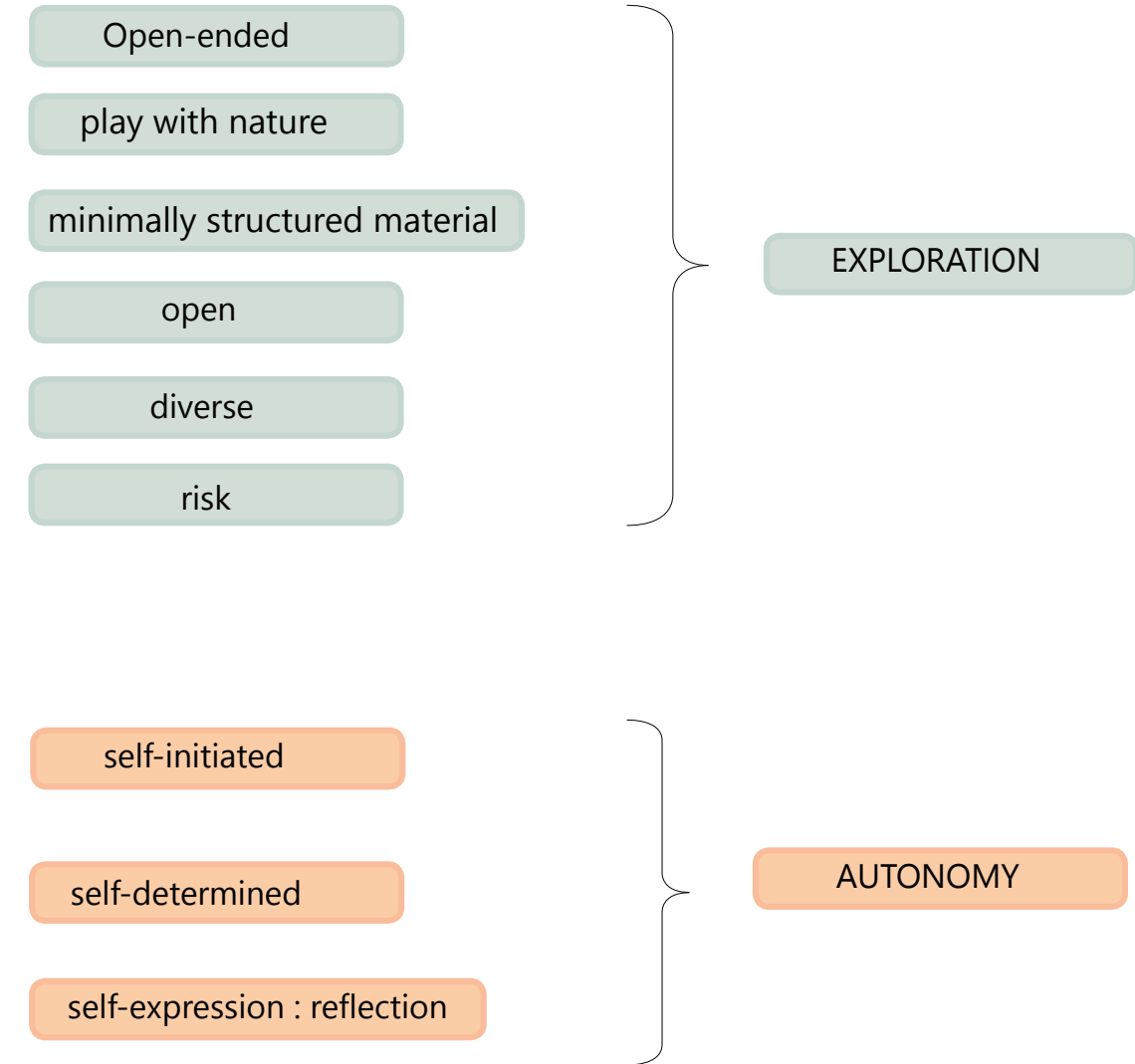
Fig 2.7



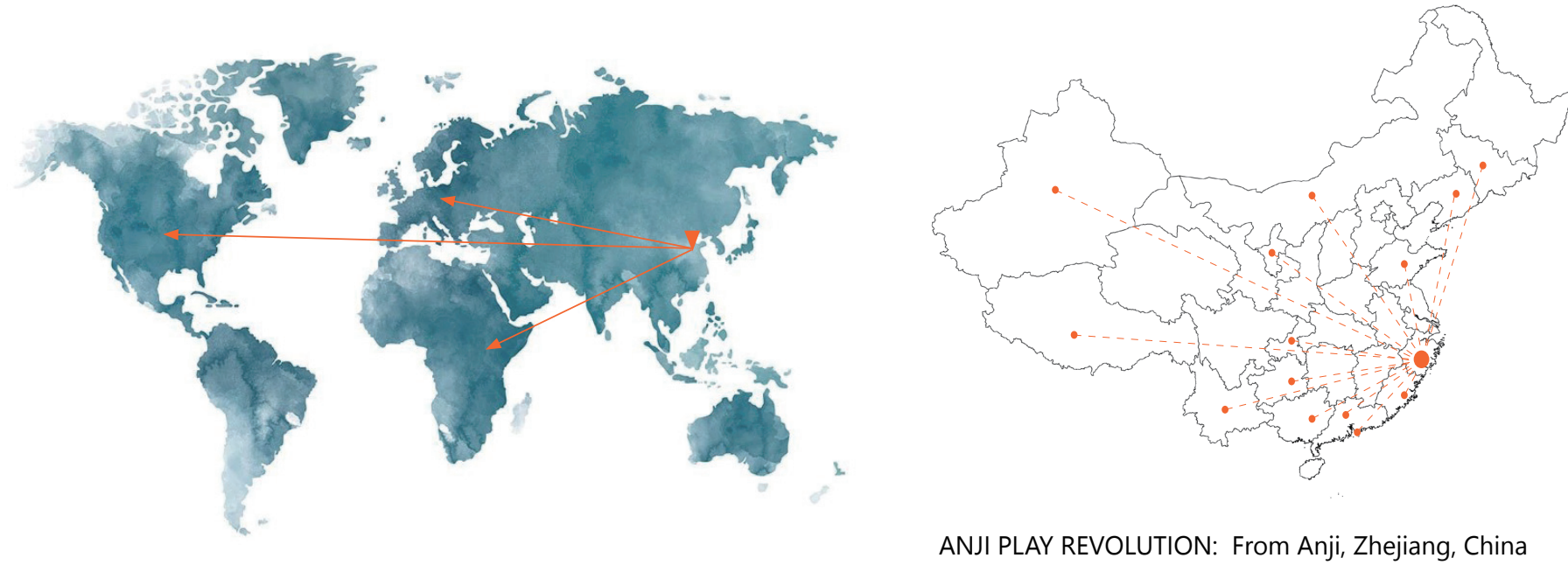
Fig 2.8

Natural

In Anji Play, these environments are designed to maximize opportunities for imagination, inquiry, and contact with natural phenomena and elements. Water, sand, mud, trees, bamboo, ditches, tunnels, and hills are among the environmental features that engage children in endless exploration, discovery, risk-taking, problem solving, and knowledge creation.



Current Development Situation



Anji Play has been spread to over 100 public kindergartens in more than 34 provinces in China. It has also been piloted and demonstrated in programs in the United States, Europe, and Africa.¹

But, most of them are in rural area.



Fig 2.9

Anji play relies a lot on outdoor space, but most kindergartens in city area don't have large outdoor play space.

How to design/reform a kindergarten with limited outdoor space based on Anji Play philosophy?

CHILDREN DEVELOPMENT (3-6 YEARS OLD)

Physical

Physical development refers to the development of motor skills, physical stamina, and confidence while promoting fitness and health. During the early childhood years, such growth happens at a rapid pace. There are two types of motor skills¹:

Gross(or large) motor skills, which are involved in the movement and coordination of larger muscles, including arms, legs, and so on. In order to develop gross motor skills, children need to walk, climb, dig, roll, run, jump, leap, ride, hop, skip, balance, hang, cling, swing, lift, push, pull, fall down, stretch, carry, and so on.

Fine(or smaller) motor skills, which are involved in the smaller movements in the fingers, toes, eyes, and so on. In order to develop fine motor skills, children need to draw, write, grasp, throw, wave, catch, pick up, and so on.



“Nakamura method”

According to a study by Professor Nakamura at Yamanashi University in Japan, there are more than 36 basic movements that children should experience in early childhood. This goal should be achieved not only through exercise, but also by increasing the variety of games in daily life.²

◀ Translation

flip	get up	stand	grapple	stride	handstand
hang	pedal	float	crawl	walk	climb
flit (vertical)	flit (horizontal)	run	go through	swim	glide
capture	grab	throw	kick	hit	catch
dig	shake	carry	hand over	hold	stack
pushover	push	hold down	pull	Strick	bicycle

Fig 2.10

Cognitive



Jean Piaget
9 Aug 1896 – 16 Sep 1980

Piaget’s Theory of Cognitive Development

Age Range	Description of Stage	Developmental Phenomena
Birth - 2	Sensorimotor - Experiencing the world through senses and actions	Object permanence Stranger anxiety
2 - 6 years	Preoperational - Representing things with words and images	Pretend play Egocentrism Language development
7 - 11 years	Concrete Operational - Thinking logically about concrete events and grasping concrete analogies	Conservation Mathematical transformation
12 - adulthood	Formal Operational - Thinking about hypothetical scenarios and processing abstract thoughts	Abstract logic Potential for mature moral reasoning



Piaget was a Swiss psychologist known for his work on child development. Piaget's theory of cognitive development and epistemological view are together called "genetic epistemology". Piaget placed great importance on the education of children.



Lev Vygotsky
17 Nov 1896 – 11 Jun 1934

Vygotsky was a Soviet psychologist, the founder of an unfinished Marxist theory of human cultural and bio-social development commonly referred to as "cultural-historical psychology".

Vygotsky believed that social environment played a key role in learning and that the integration of social factors and individual factors contributed to learning.¹

Constructive Theory

- Children construct their knowledge
- Development can not be separated from its social context
- Prior conceptions and new concepts are interwoven
- Language plays a central role in mental development

1. Shaffer, David R., and Katherine Kipp. Developmental Psychology: Childhood and Adolescence. Belmont, CA, USA: Wadsworth Cengage Learning, 2014.

1. Kntnik, Jure. Designing Spaces for Early Childhood Development Sparking Learning & Creativity. Mulgrave, Australia: Images publishing group Pty Ltd, 2017.
2. “Nakamura Method’ と 36 の基本動作.” Mysite. Accessed December 29, 2019. <https://www.everytokyo.com/about>.

Cognitive development refers to the mental development of children. Cognitive skills are associated with language, perception, memory, reasoning, problem-solving and thinking, imagination, and so on¹. In order to acquire cognitive skills, children need to:

be involved in the decisions about their play space

define and evolve their environment

make choices and see the possibilities

perform and role-play

retreat and hide but at the same time see others

be quite and observe the world around them

explore, discover, and reflect



Fig 2.13

KM Kindergarten and Nursery



Fig 2.14

Forest kindergarten, Shandong, China



Fig 2.15

D1 Kindergarten and Nursery, Kumamoto, Japan

Social development

Social development refers to the process by which children learn to interact with others around them. In the process, children understand rules, cooperation, and sharing, and use these to develop friendships and other relationships. Through social development, they also develop language skills, built self-esteem, strengthen learning skills, and learn how to handle conflicts.¹

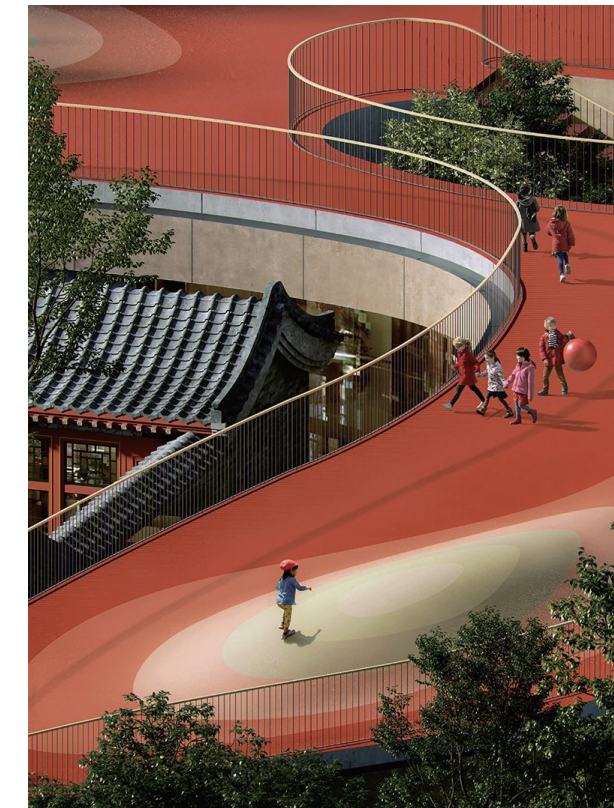


Fig 2.16

Beijing Lecheng Siheyuan Kindergarten

Emotional development

Emotional development refers to the emergence of children's experience, expression, understanding, and regulation of their emotion. Through emotional development, they know love, empathy, responsibility, and so on.²

In order to acquire social and emotional skills, children need to socialize, talk, share, hang out together, engage in free play, walk and run together, have contact with nature, tend toys, plants or animals, experience beauty, vegetation changing with season, light, color, texture, and so on.



Fig 2.17

D1 Kindergarten and Nursery
Kumamoto, Japan



Fig 2.18

vegetation changing with season

1. Kntnik, Jure. Designing Spaces for Early Childhood Development Sparking Learning & Creativity. Mulgrave, Australia: Images publishing group Pty Ltd, 2017.
2. Kntnik, Jure. Designing Spaces for Early Childhood Development Sparking Learning & Creativity. Mulgrave, Australia: Images publishing group Pty Ltd, 2017.

CHILDREN'S SCALE RESEARCH (3-6 YEAR OLD)

Children's physical scale(3-6years old)

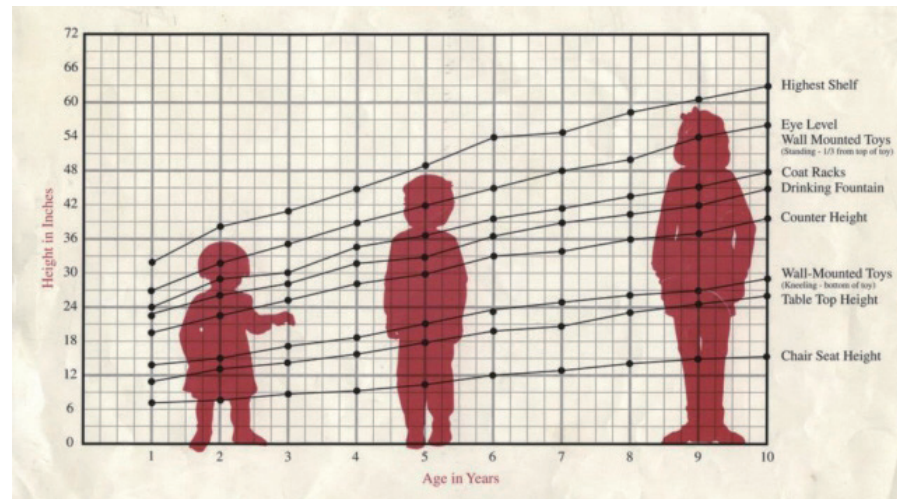


Fig 2.19

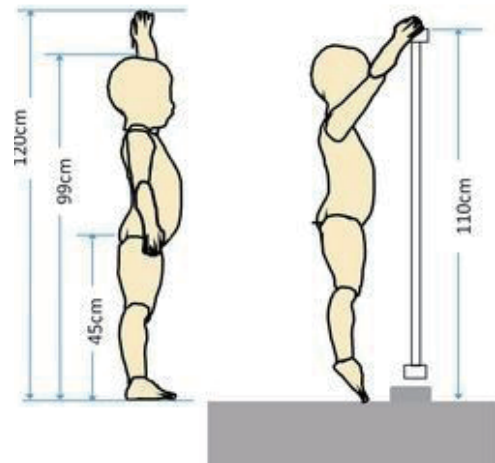


Fig 2.20

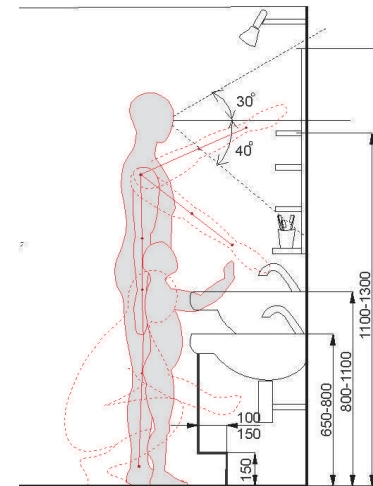
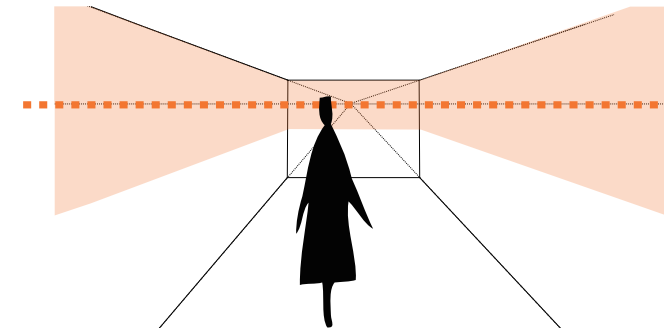


Fig 2.21

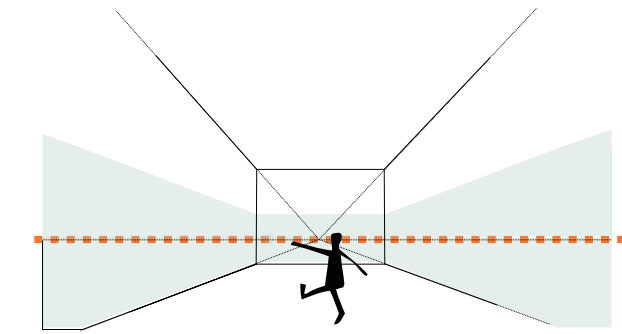
Anthropometrics for children

These three figures show the eye level, chair seat height, handrail height, and bathroom sink height of children and adults.

visual scale

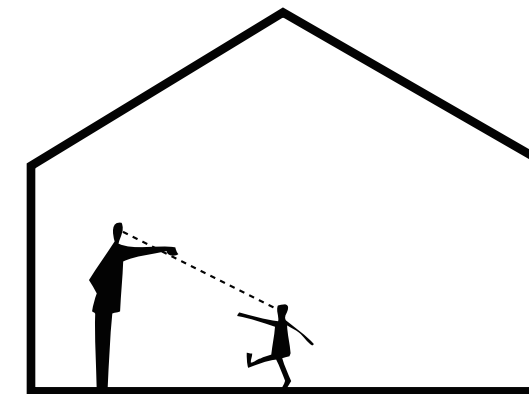


adult's view

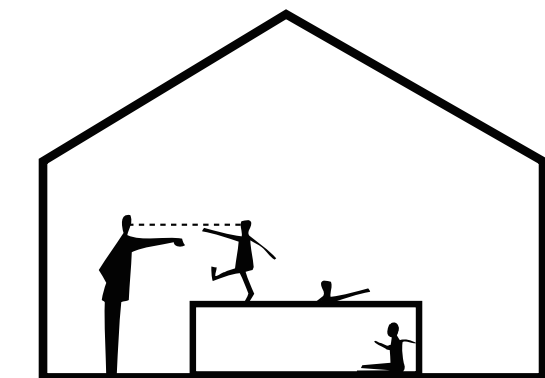


children's view

mental experience



mental distance



equal; mutiple communication

PRECEDENTS

Chuon Chuon Kim Kindergarten

Architects: KIENTRUC O

Location: District 1, Vietnam

Keywords: home-like, scale, discovery



Fig 2.22

The architects approach this project with an understanding children naturally feel more comfortable in spaces that are relatively related to their size, of which offer a sense of safety and freedom to explore their surroundings.¹



Fig 2.23

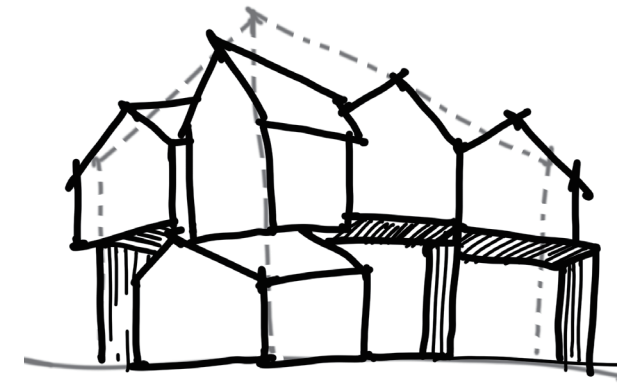


Fig 2.24

From a larger point of view, a cluster of small spaces stimulates and encourages the children to go out and discover what is beyond their own personal bubble. The flexible spatial organization is a direct respond to programmatic requirements and the educational experience the architects want to offer.¹



Fig 2.25



A big volume will create an unsafe feeling. Many Chinese kindergartens are in big volume. Decomposing the building into several small parts is a good solution.

16 1. Valenzuela, Karen. "Chuon Chuon Kim Kindergarten / KIENTRUC O." ArchDaily. ArchDaily, January 12, 2016. https://www.archdaily.com/780213/chuon-chuon-kim-kindergarten-kientruc-o?ad_medium=gallery.

1. Valenzuela, Karen. "Chuon Chuon Kim Kindergarten / KIENTRUC O." ArchDaily. ArchDaily, January 12, 2016. https://www.archdaily.com/780213/chuon-chuon-kim-kindergarten-kientruc-o?ad_medium=gallery.

Apollo Schools

Architects: Herman Hertzberger
Location: Amsterdam
Keywords: central space; sightline



Fig 2.26

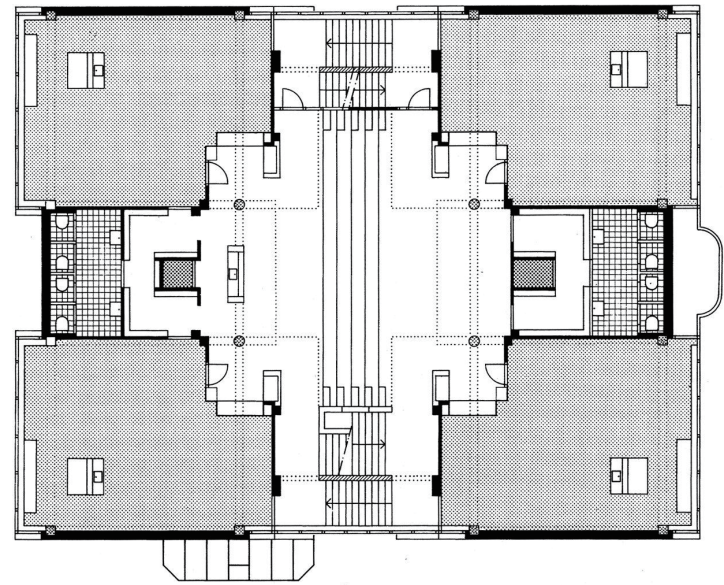


Fig 2.27

▲ Ground Floor Plan

◀ Steps in the central space can both open up views and give protections. So it can not only attracts people but also keep them there.¹ It will become a hangout area and serve for different activities.



Fig 2.29

▲ The height of the window lets children who sit on the chair can focus on their work while teachers can supervise them.



Fig 2.28

◀ The generally awkward space under the bottom of most stairs can be accessed and used when the floor area here is made deeper.¹

SITE CONDITION



Shanghai, China

The selected building is located in a historical residential area which has lots of beautiful historical buildings and trees surrounding. The overall atmosphere is quite and walk friendly which is suitable for kindergarten.



Fig 3.1

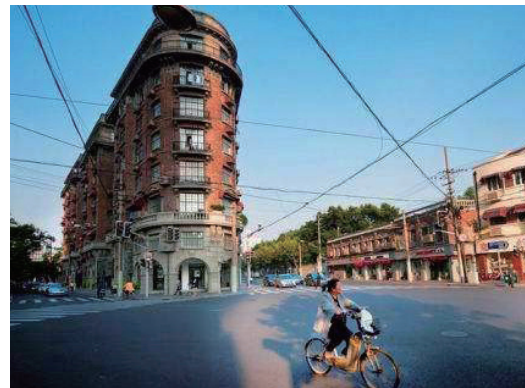
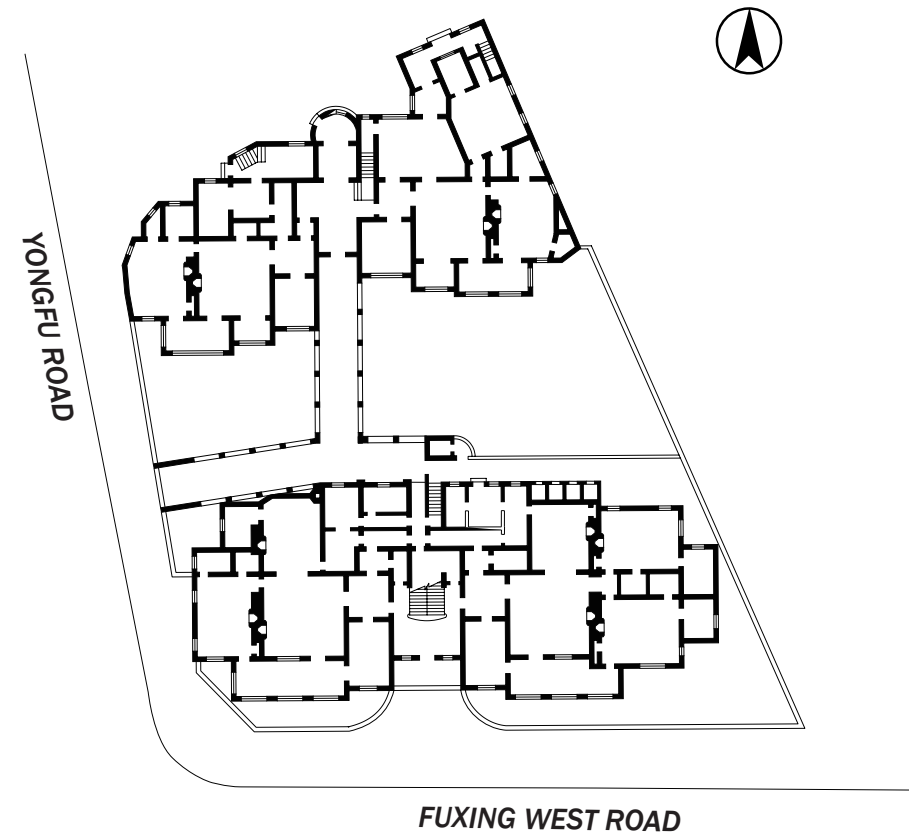


Fig 3.2

BUILDING CONDITION



Cloister Apartment

Building Area: 2741m²
Structure: masonry-timber
Spanish style historical building

Why choosing this building?

- Suitable volume and space area for a kindergarten
- Limited outdoor space
- The old western-style villa is a symbol of Shanghai's special history and culture. It is good for children to understand their local culture.

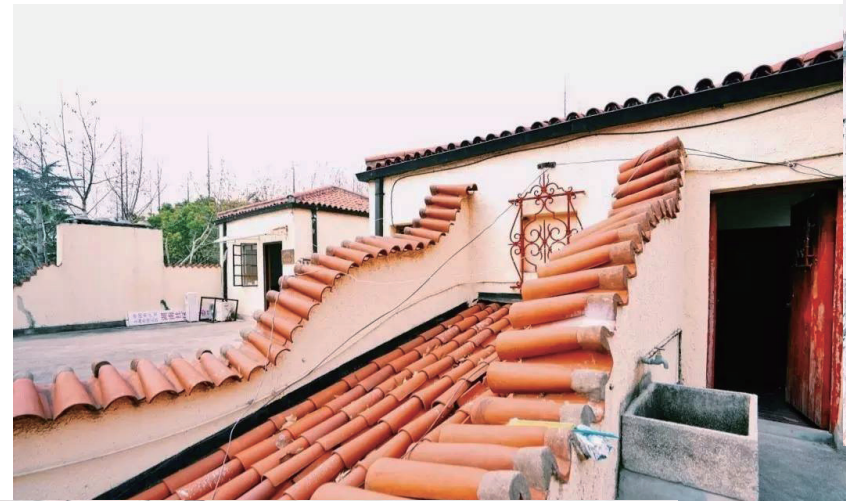


Fig 3.3

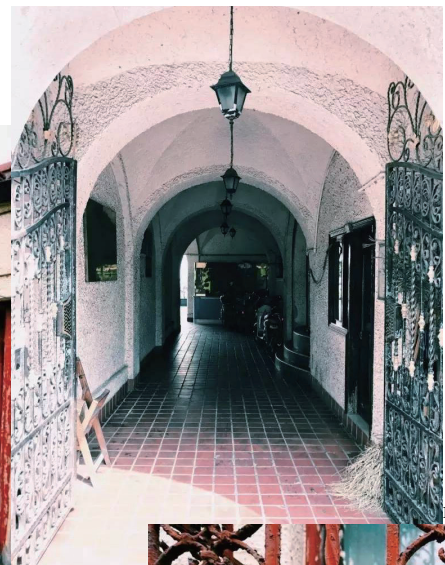


Fig 3.4



Fig 3.5



Fig 3.6



Fig 3.7



Fig 3.8

1930

It is built by an english businessman as his house and wool workshop.



now

a small gallery (1st floor south); apartments (north)



Fig 3.9

the cloister

The old spanish style cloister is the key feature of this building.



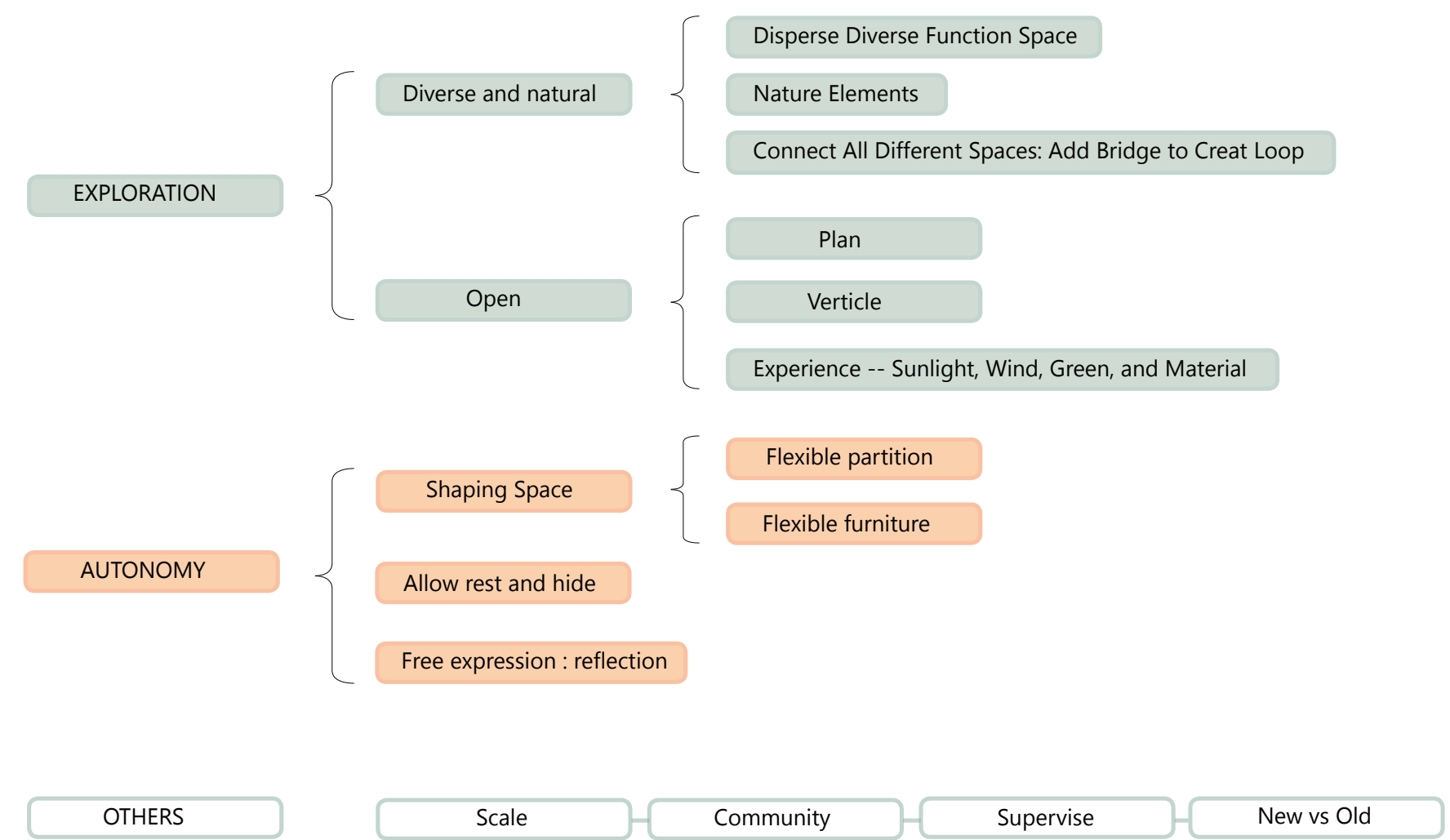
Fig 3.10

the pediment

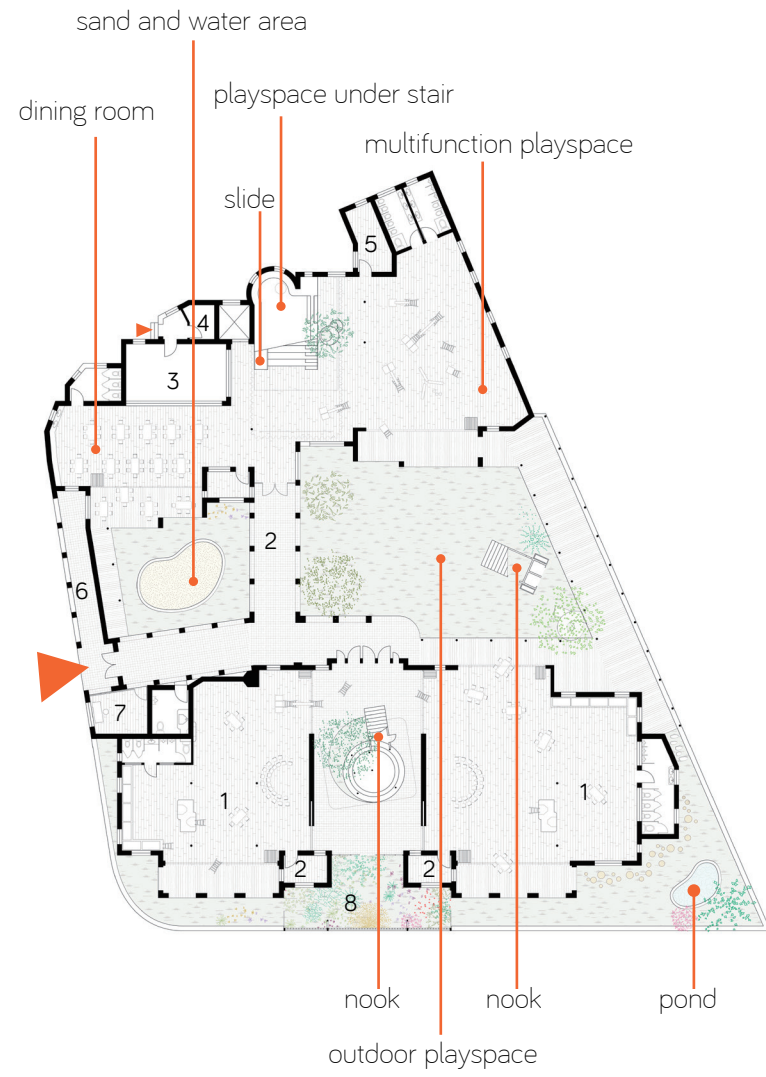
The pediment is another key element of this building. It is very rare in Shanghai.



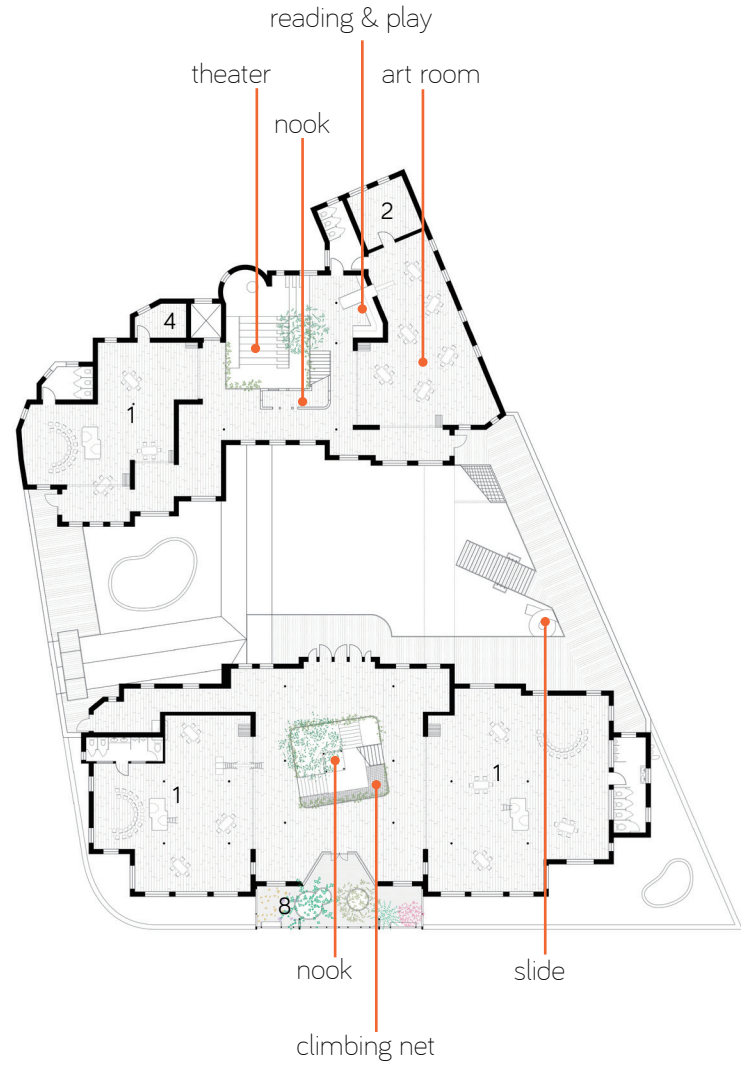
DESIGN STRATEGIES



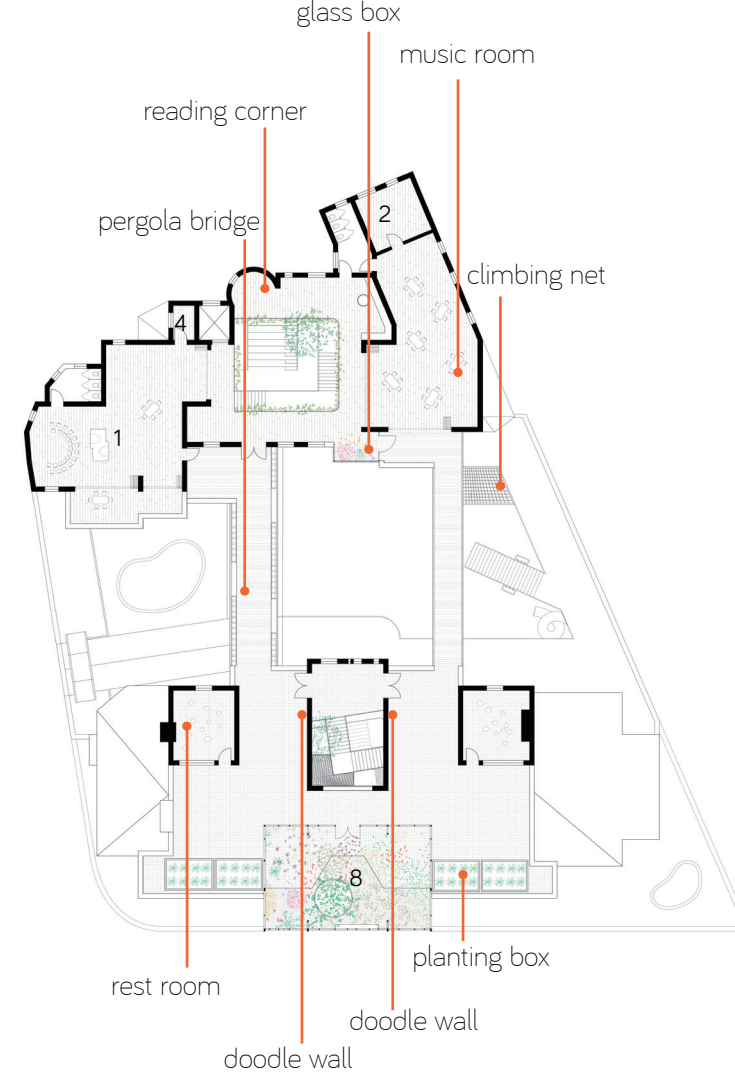
EXPLORATION



1st Floor Plan



2nd Floor Plan



3rd Floor Plan

Disperse Diverse Function Space

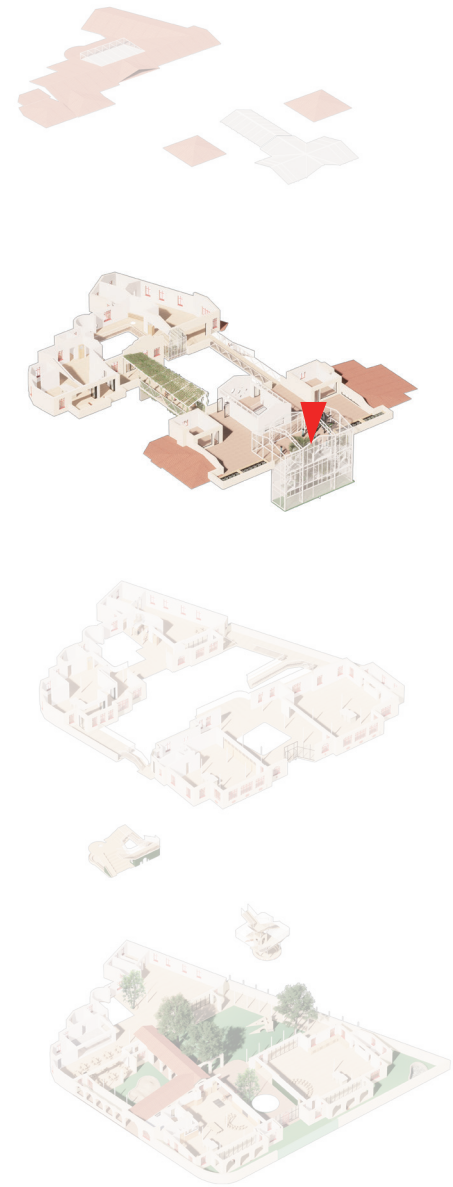


- 1. classroom
- 2. office
- 3. kitchen
- 4. storage
- 5. medical room
- 6. waiting area
- 7. security room
- 8. green house

◀ Disperse diverse function space

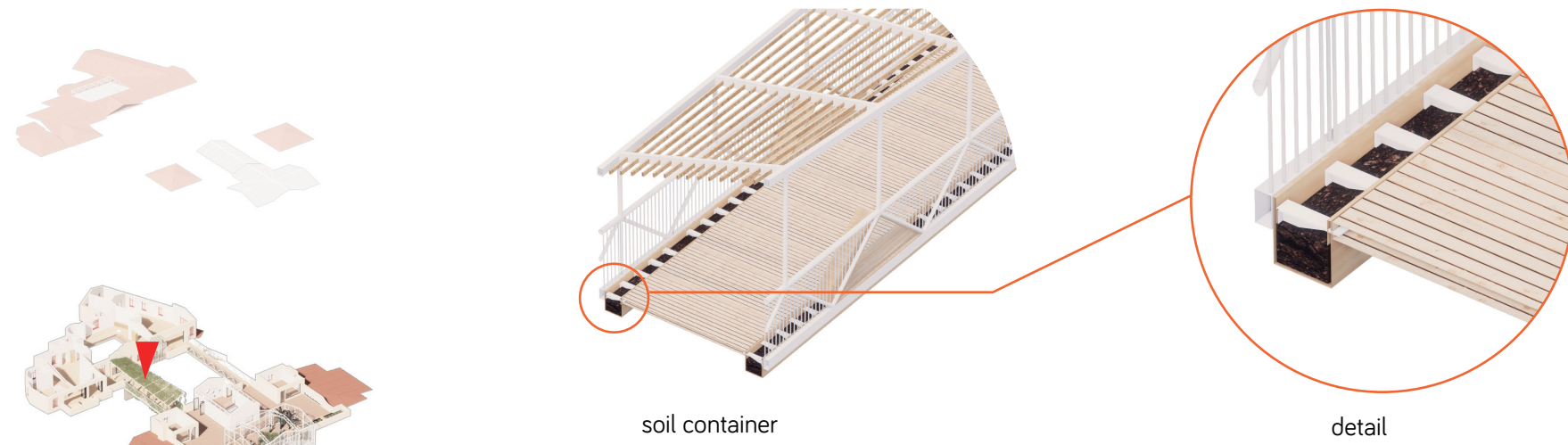
Put diverse space with different functions and different space quality on different floors, different places to encourage children to discover the whole kindergarten.

Nature Elements: Green House



▲ South Elevation

Nature Elements: Pergola Bridge

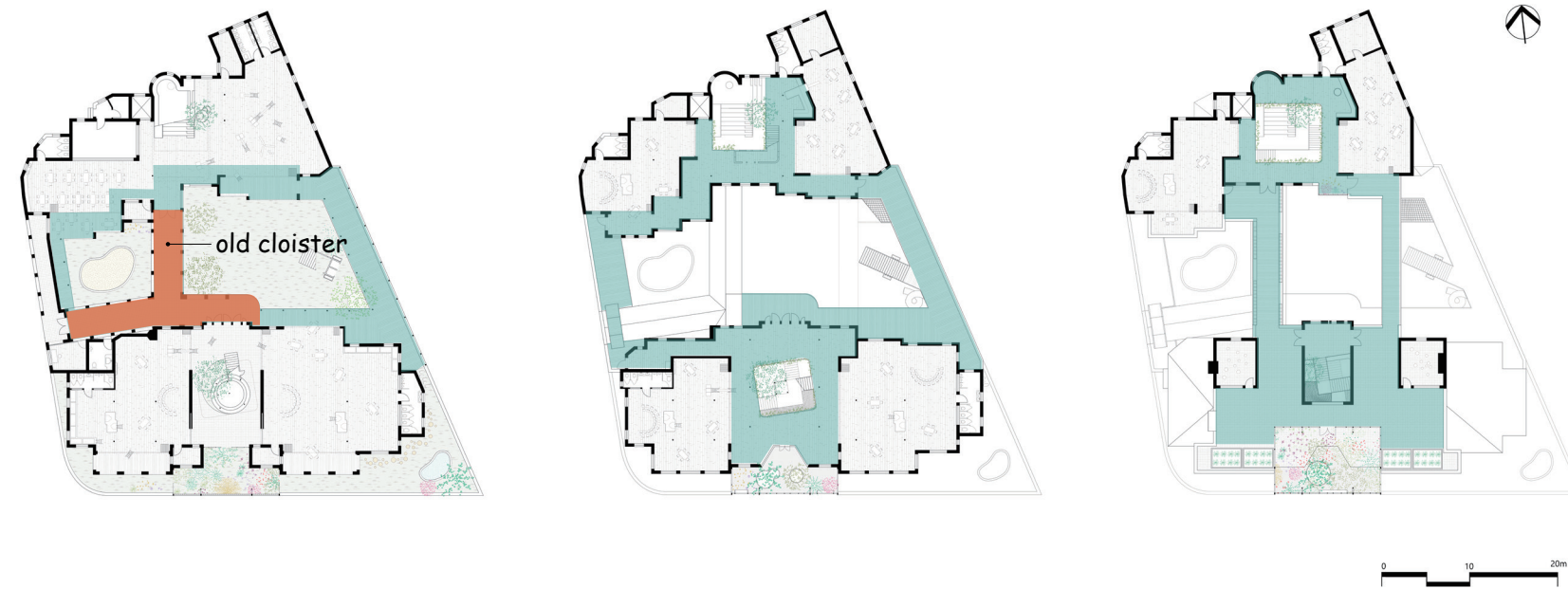


▲ Warren truss structure

To create less shadow, warren truss structure was used for two third floor bridges. As a lightweight modern structure, it creates a contrast between old cloister.



Connect All Different Spaces: Add Bridge to Create Loop

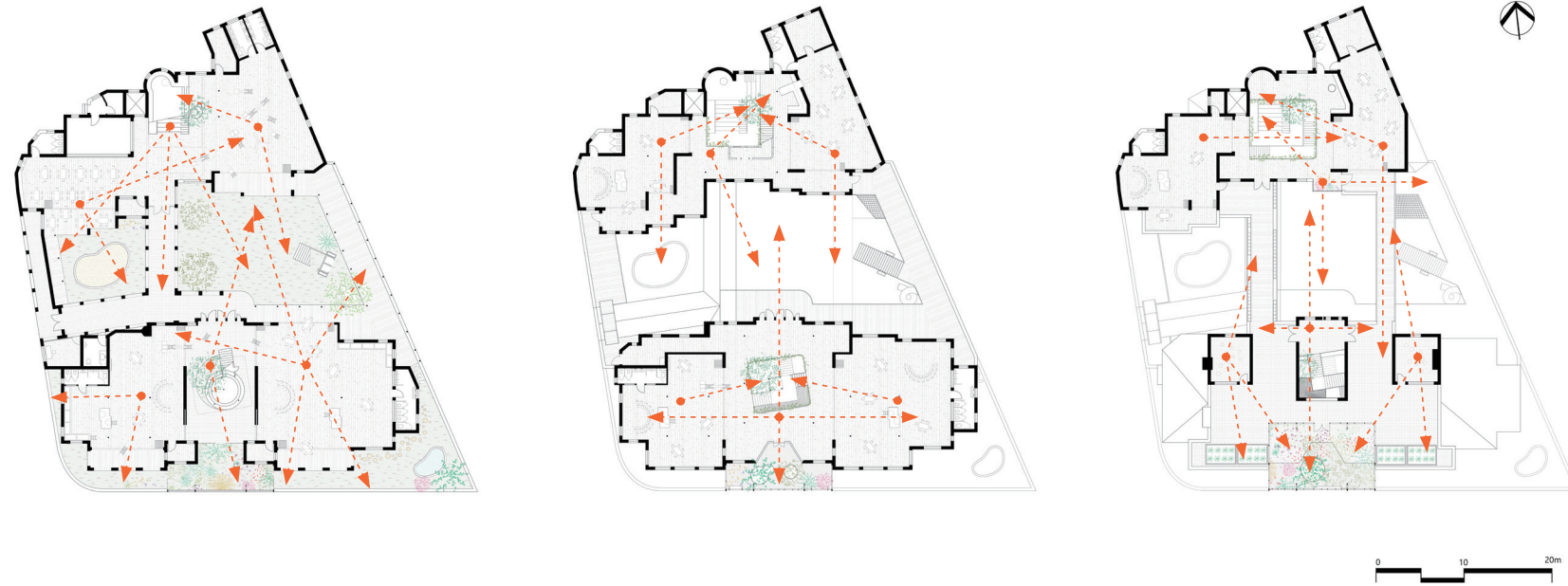


▲ 2nd floor Loop

◀ Connect All Different Spaces: Add Bridge to Create Loop

Because this building does not have enough outdoor space, adding bridges to create loops can increase children's exercise which is beneficial to children's physical development.

Open: Plan



▲ classroom connected with courtyard

◀ Open plan: sightline & accessibility

The open plan can blur the boundary between indoor and outdoor, increase play area, and have more communication of children in different spaces. It can encourage children to explore more.



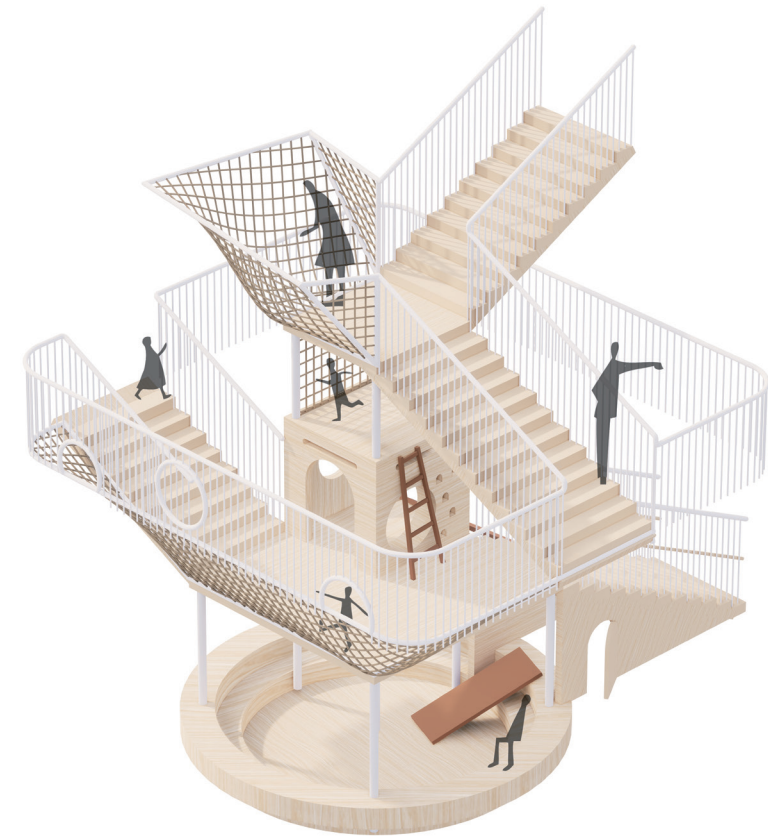
"The classroom should be outdoors in miniature. The outdoors should be classroom magnified."

— Ms. Cheng Xueqin; Founder of Anji Play

◀ **Dinning room**

Bright eating space will let children know the food and enjoy the food better.

Open: Verticle



South building stair

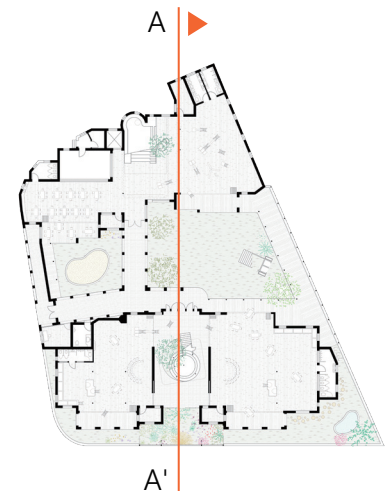




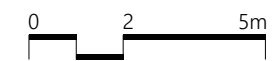
North building stair

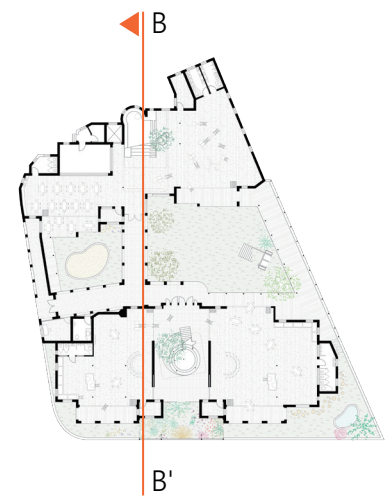
Compare to normal stair design, the open stair design not only encourages children to have more communication but also allows teachers to keep children's safety. Moreover, it creates several interesting spaces that can encourage children to discover and play.



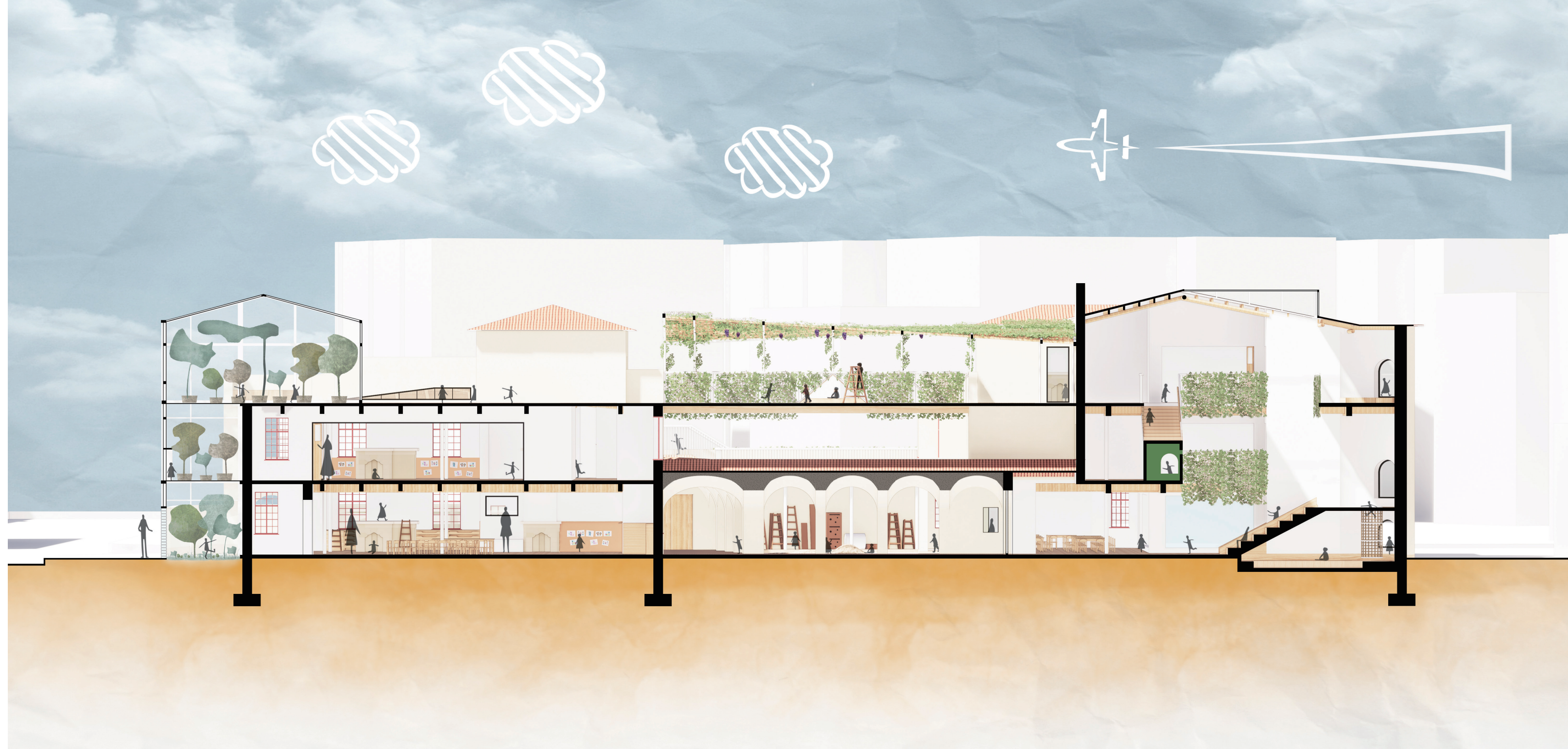
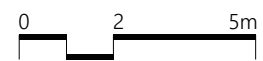


Section AA'

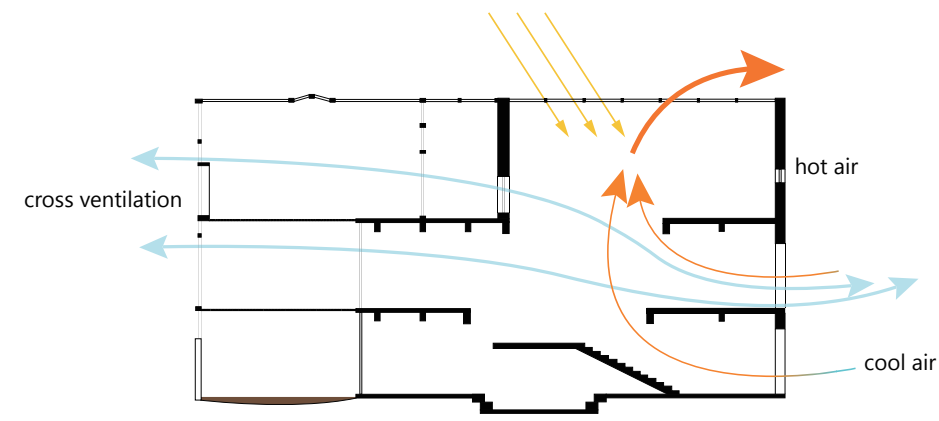




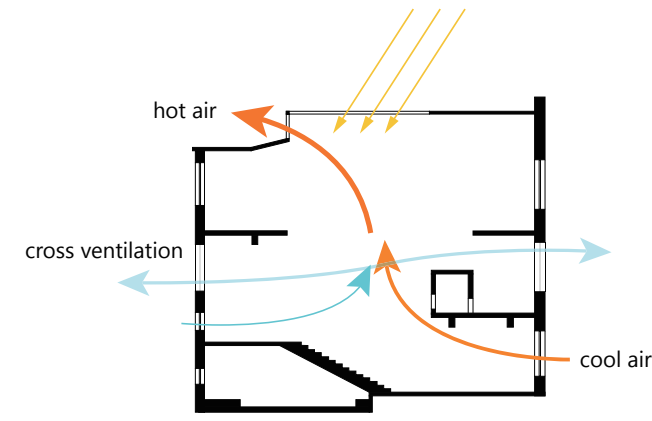
Section BB'



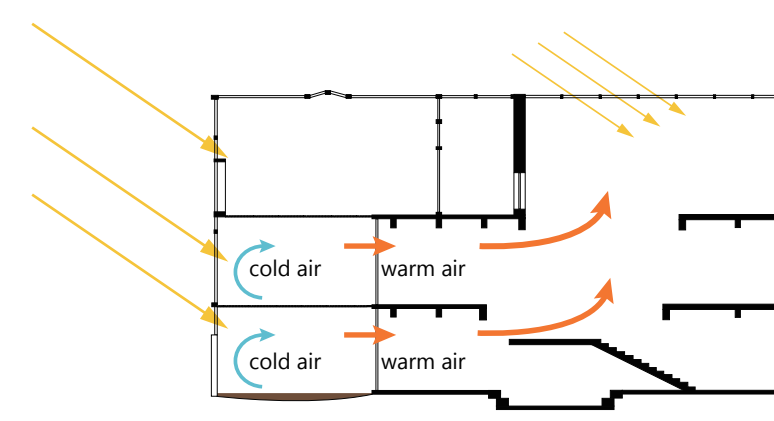
Open : Experience -- Sunlight and Wind



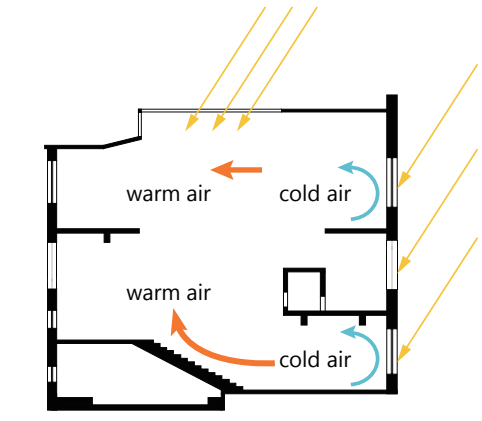
South building: Summer



North building: Summer



South building: winter



North building: winter

During summertime, the design can bring more nature ventilation by chimney effect and cross ventilation, which is beneficial to children's health and bring the experience of outdoor.¹

During wintertime, the greenhouse can warm the cold air by solar energy. The atrium glass roof can not only bring warm sunlight but also heat the space. Sunlight and wind can bring more outdoor feeling to this building.



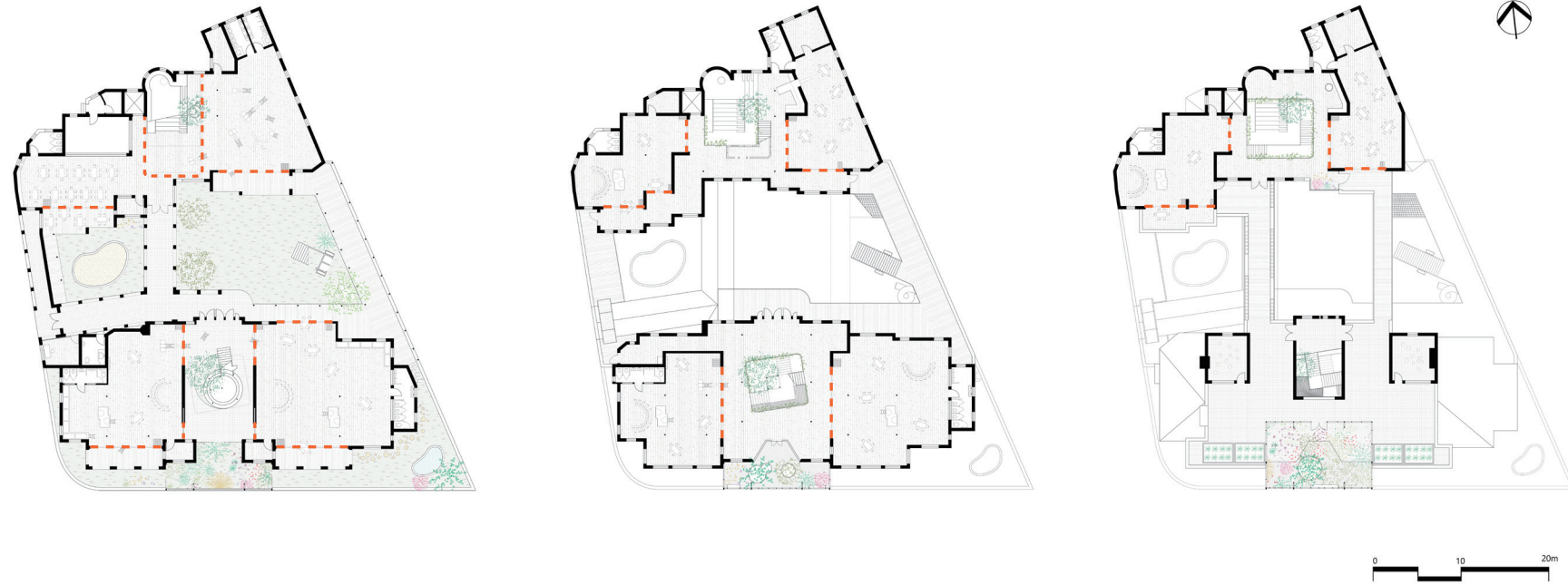
Open : Experience -- Green, Material



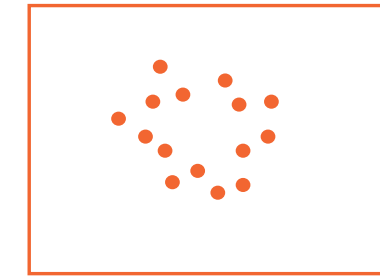
By continually using the floor tile material of the old cloister in the indoor area, can bring indoor a feeling of outdoor. And the plants can make the whole space more lively and natural.

AUTONOMY

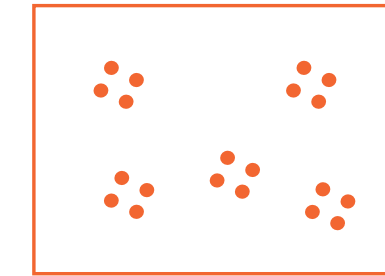
Flexible partition



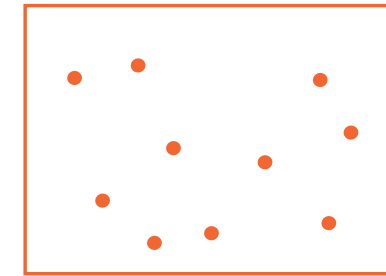
Flexible and lightweight furniture



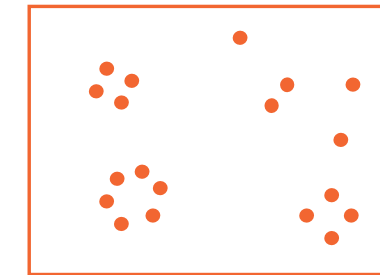
Group circular



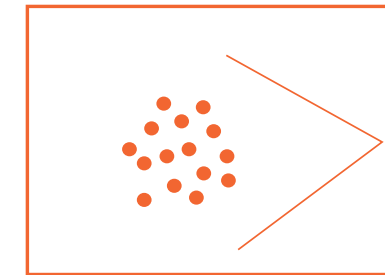
Smaller groups



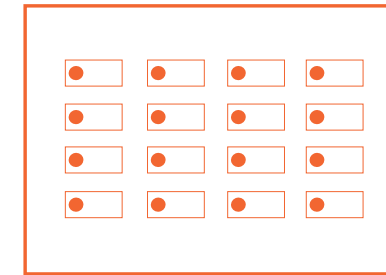
Dispersed individuals



Mixed



Group congested



Sleeping

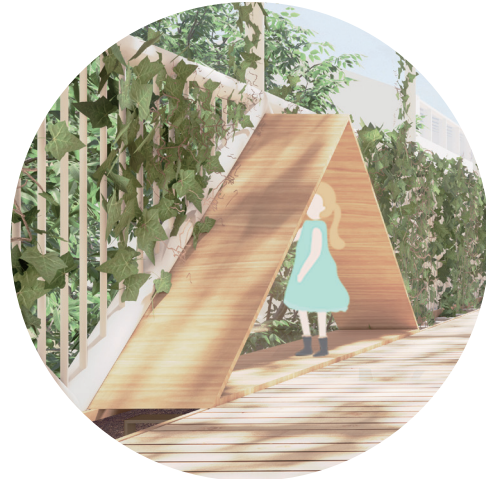


◀ Classroom folding door

A sense of allowing them ownership of the place is the key to acknowledging the children's autonomy.¹ By using flexible and lightweight partition and furniture, children will become the owner of the space. They can make decisions and control the space by themselves.

1. Barrable, Alexia. "Shaping Space and Practice to Support Autonomy: Lessons from Natural Settings in Scotland." Learning Environments Research, February 2019. <https://doi.org/10.1007/s10984-019-09305-x>.

Allow rest and hide



Pergola



reading area



playful stairs: south



playful stairs: north



courtyard stairs

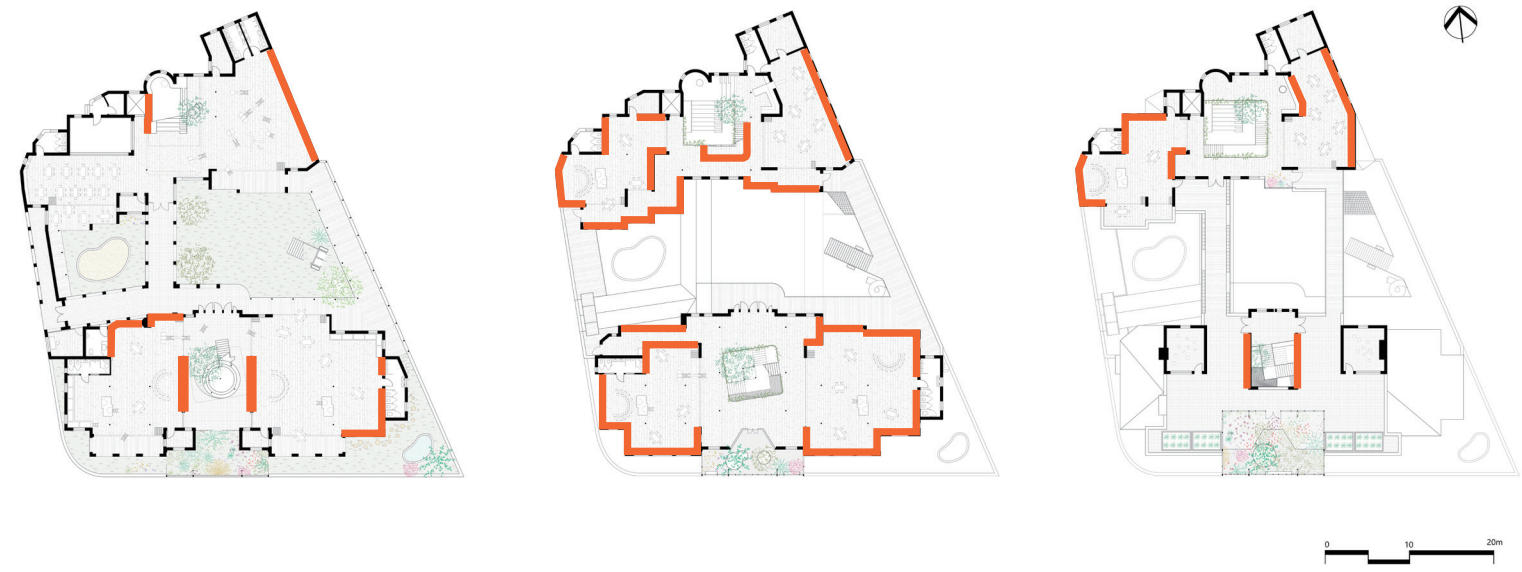


playful stairs: north

The sense of spatial autonomy is never more pronounced than when children claim spaces through the building of dens. Den is a special place where the 'birth of self' takes place.¹

1. Sobel, David. "A Place in the World: Adults' Memories of Childhood's Special Places." *Children's Environments Quarterly* 7, no. 4 (1990): 5–12.

Free expression: reflection



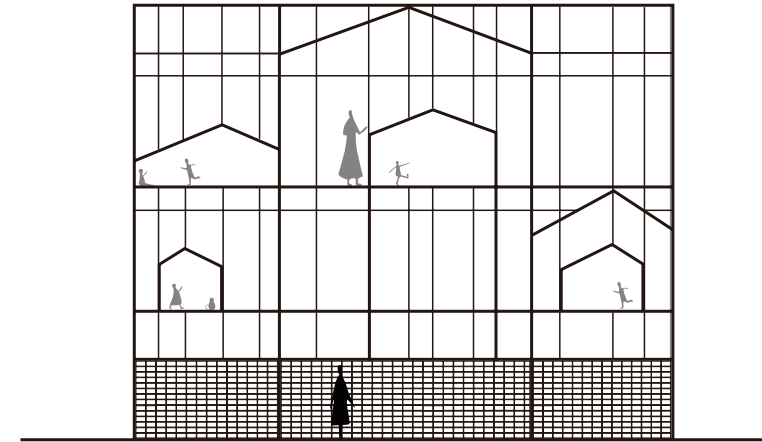
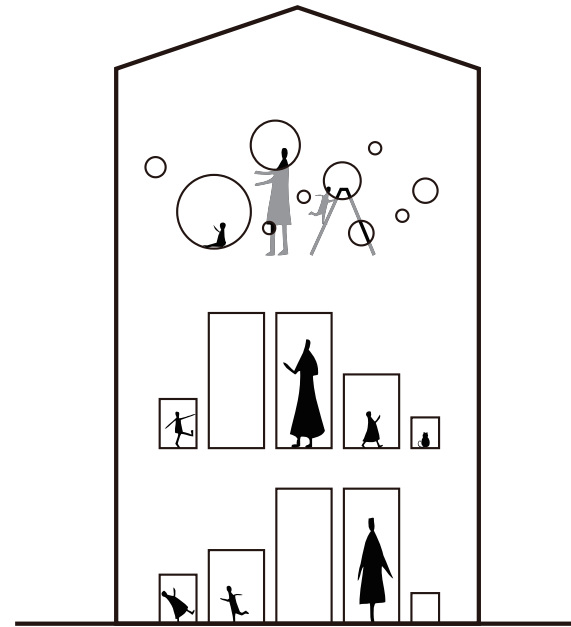


Reflection is really important in Anji Play philosophy. By putting blackboards, cork walls, and doodle wall on the roof garden, children can have a free expression environment.

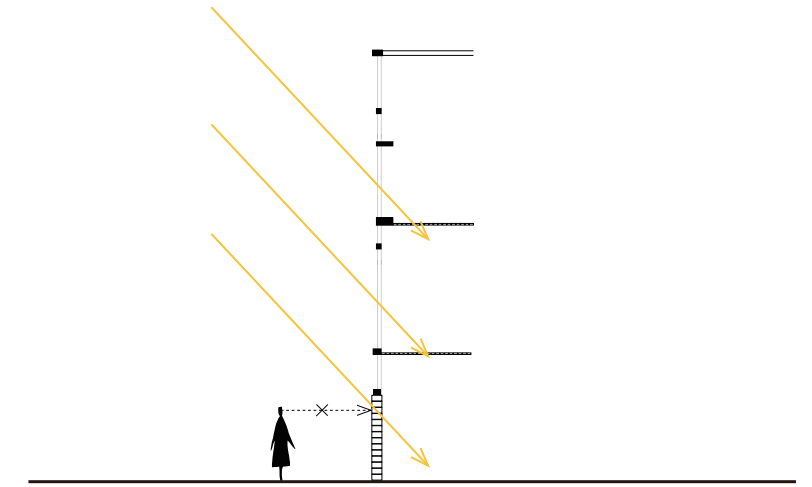


OTHERS

Scale



To make the greenhouse more intimate to children, the big glass box volume is divided into several small parts.



Glass blocks are used on the first floor of the greenhouse. For it can keep privacy while letting sunlight go through.

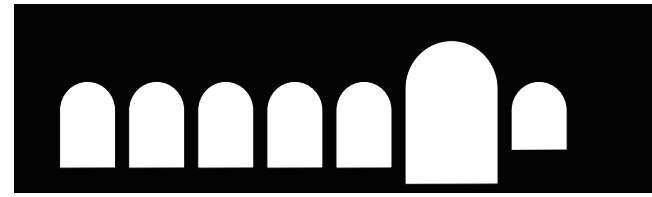
Fig 3.11



Greenhouse floor material: mesh. For sunlight can go through it.

Fig 3.12

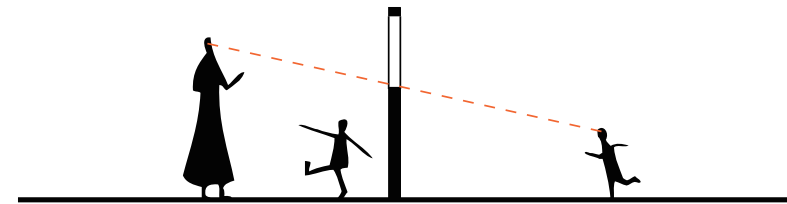
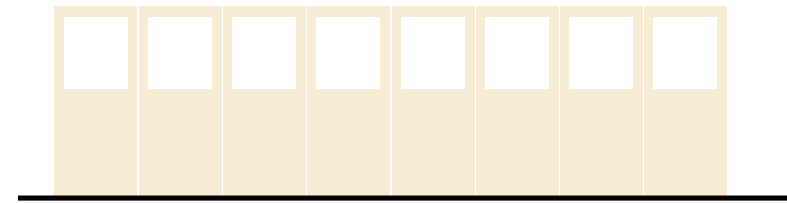
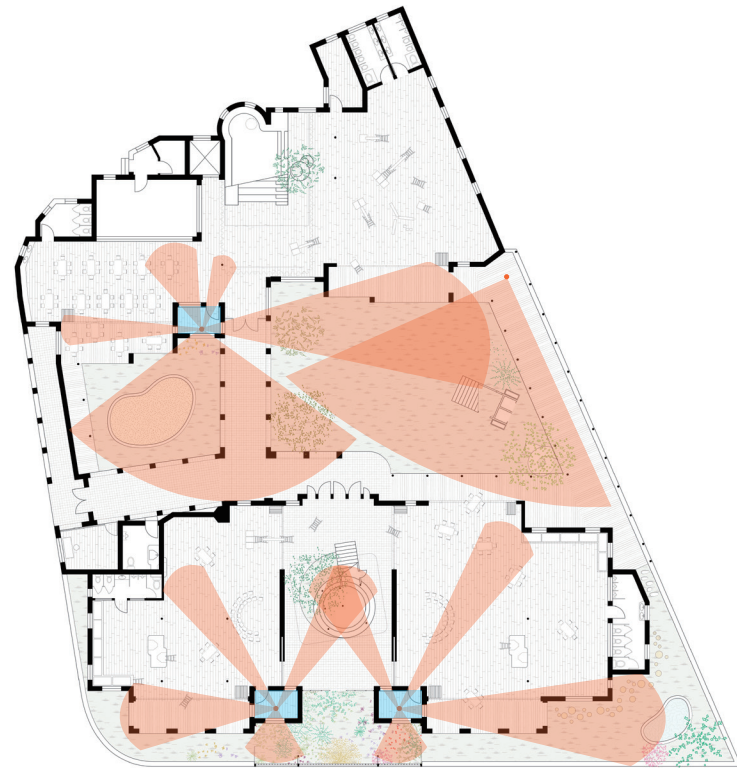
Waiting area: Service community



The new addition corridor is the reflection of the old cloister which follows the form language and shows the most important feature of the old building. It not only can offer a wait and rest space for parents but also can serve the community as a semi-public space.



Supervise



New vs Old



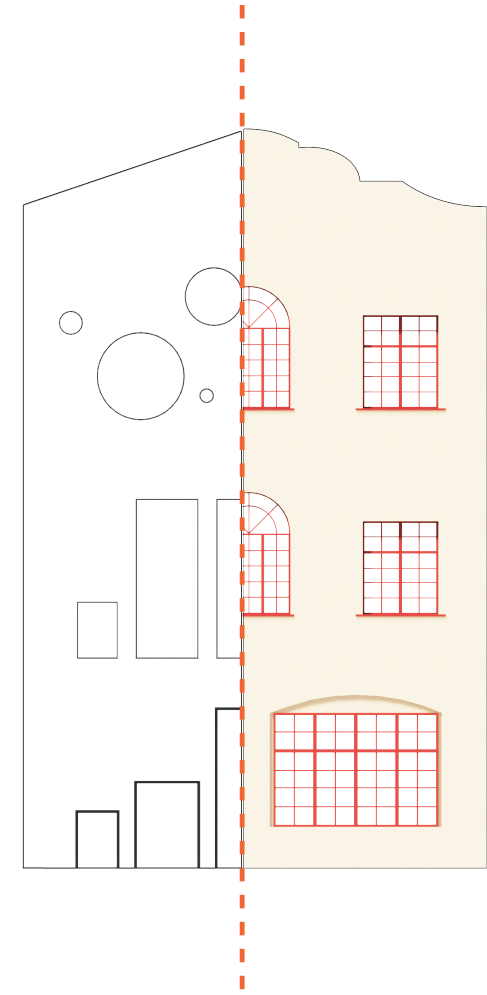
Even the old fireplaces do not have any function now, the design still keeps one in each classroom. They can not only bring a warm and home-like atmosphere but also keep the old memory. And they can be play spaces which allow children to hide and climb.



The new addition corridor follows the form of the old cloister which can show respect to the old building.



The new steel column keeps the ratio of the old cloister to present a harmonious rhythm.





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Precedent resource

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This article presents how early childhood educators shape the space to promote autonomy in children aged 3-8 years.

Sobel, David. "A Place in the World: Adults' Memories of Childhood's Special Places." *Children's Environments Quartely* 7, no. 4 (1990): 5–12.

Using extensive interviews and written recollections, this paper presents the attributes of special places such as dens, forts, playhouses, their meaning for their creators, and the role of the creation of special places plays in the evolution of the self.

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