

Nanotechnology center of excellence

THESIS

Submitted in partial fulfillment of the requirements for the award of
Bachelor of Architecture degree

By

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(3621009)



**DEPARTMENT OF ARCHITECTURE SCHOOL OF BUILDING AND
ENVIRONMENT**

SATHYABAMA

**INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)**

Accredited with Grade "A" by NAAC

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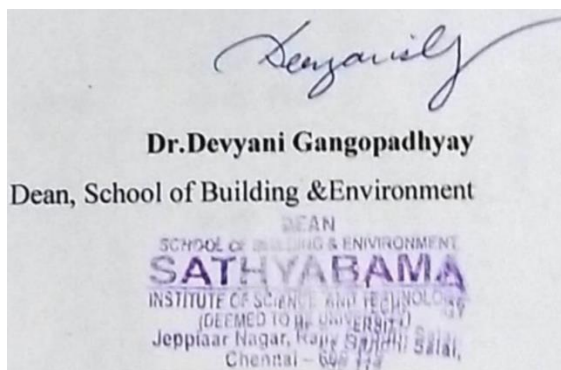
BONAFIDE CERTIFICATE

This is to certify that this Thesis Report is the bonafide work of **ANTONY JENIX. M (3621009)** who carried out the Thesis "**Nanotechnology center of excellence**" under our supervision from January 2021 to May 2021

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Internal Review Member

External Guide



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Submitted for Viva voce Examination held on _____

Internal Examiner

External Examiner

DECLARATION

I, **ANTONY JENIX. M** hereby declare that the Thesis Report entitled **“Nanotechnology center of excellence”** done by me under the guidance of Internal Guide, Internal Review Member and External Guide. Sathyabama Institute of Science and Technology is submitted in partial fulfillment of the requirements for the award of Bachelor of Architecture Degree.

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PLACE: Chennai

SIGNATURE OF THE CANDIDATE

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ABSTRACT

“Kids arena is an interactive city made for children 1-14 that combines inspiration, fun and learning through realistic role-play. Kids can independently explore a scaled indoor city of over 10,000 square meters with more than 100 exciting careers that they can try.”

Kids arena is a kid-sized city where kids can explore over 70 role-playing activities in establishments found in a real city — such as a Fire Station, Hospital, Theater, Factories, TV Studio, and even an Airport! It is the ultimate role-playing environment where kids can safely discover how a city works and try out various professions. Each establishment offers a unique experience where they will learn financial literacy as they earn kidZos, Kidsarena’s own currency, which they can save in a bank account or use to purchase goods or services.

Every time a kid participates in an activity, he or she is taking on a role in that activity’s story. He is the heroic fireman who must rush to an emergency. She is the brilliant surgeon who treats an ailing patient or a lovely model who ramps on a catwalk.

Through their role-play experience in the different establishments, kids learn valuable information about the establishment — its purpose, roles, products and services, processes, and even trade advice. Activities in the establishments offer learning opportunities for kids to develop and practice important life skills.

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CHAPTER 1

1. WHATS IS KIDSARENA?

Kidsarena is an interactive city made for children 1-14 that combines inspiration, fun and learning through realistic role-play. Kids can independently explore a scaled city of over 11,000 square meters with more than 100 exciting careers that they can try.

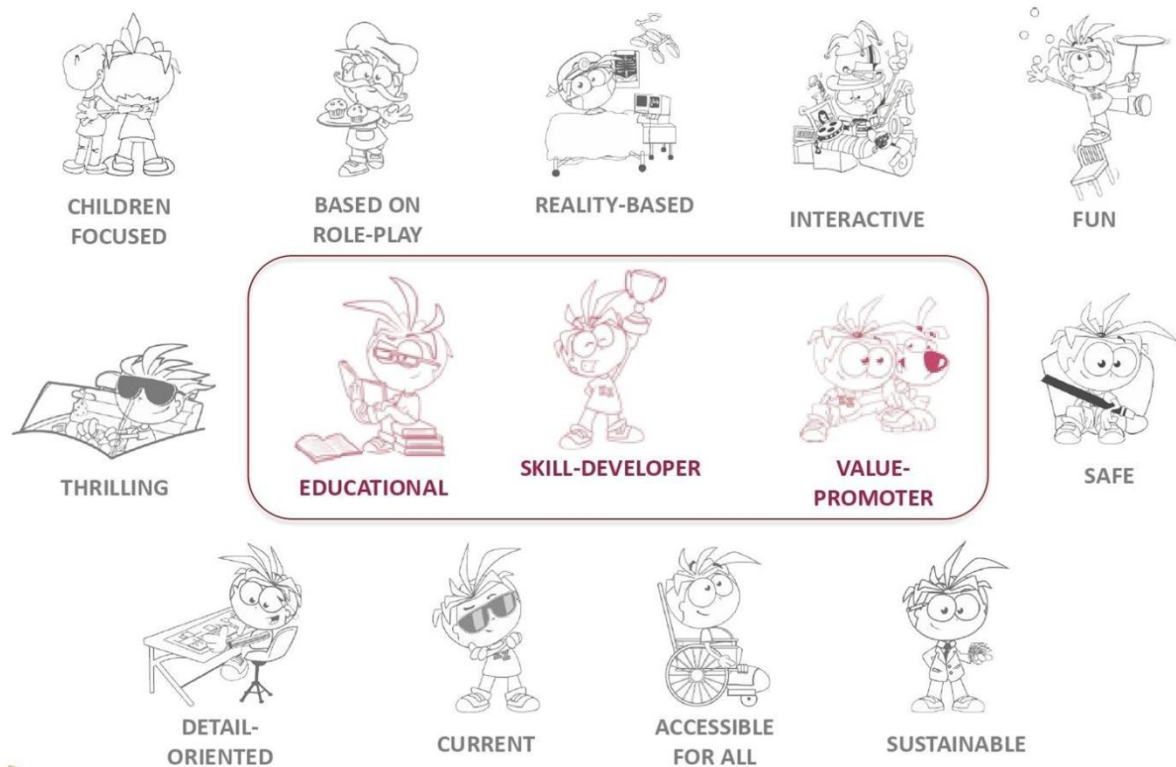
Fueled by a child's natural desire to create, explore and collaborate, Kidarena is equal parts entertainment and learning, making it one of the most progressive family entertainment concepts in the world today.

Through ultrarealistic role-play, children learn about different careers, the inner-workings of a city and the concept of managing money. Each experience is designed to empower kids, giving them the confidence to be their best selves, and inspiration to be great global citizens.

Kids arena is a kid-sized city where kids can explore over 70 role-playing activities in establishments found in a real city — such as a Fire Station, Hospital, Theater, Factories, TV Studio, and even an Airport! It is the ultimate role-playing environment where kids can safely discover how a city works and try out various professions. Each establishment offers a unique experience where they will learn financial literacy as they earn kidZos; Kidsarena's own currency, which they can save in a bank account or use to purchase goods or services.

1.1. IS THERE AN AGE LIMIT?

Kids arena's role-play activities are open to kids 2 to 16 years old. The activities have been designed to be developmentally appropriate for that age range. Kids at least 120 cm tall will be allowed to explore the play city without parental or guardian supervision but each child's security bracelet must still be matched with an adult's security bracelet upon entry. Kids below four (4) years old have dedicated establishment to toddler play and at the RightZKeepers' Residence. A parent can join the toddler play.



CHAPTER 2

COMPLETE CITY

2.1. ESTABLISHMENTS

The role-play areas at Kidsarena are representative of the most common businesses, services and industries that contribute to a conventional city's growing economy. The establishments are divided per these industry sectors:

Automotive, Culture, Education, Entertainment, Environment, Health
Industrial, Media, Private Services, Public Services, Residential
Restaurants, Retail, Sports, Transportation.

Various activities are carried out in this environment. The architecture of the establishments takes into account the relevant aspects of the role play related to each area, in a setting specially designed to adapt to the thematic components of each type of activity.

2.2. ENTRY AND EXITS

The entry area to a Kidsarena metropolis, typically known as the Airport, is usually themed as an airport ticket counter to simulate the sense of going on a journey. Mirroring the access, the exit is designed as an airport's customs and immigration counter

2.3. CITY CENTER

The city center features a central plaza that hosts institutional buildings as well as the monument of the Eternal Spirit of Kidsarena. Most of the important ceremonies take place in this area.

2.4. SUBURBS

The suburbs are located on the furthest outskirts of Kidsarena's ground floor. It generally accommodates single story commercial establishments and residential buildings, creating a sense of spaciousness.

2.5. POINTS OF SALE

Establishments are complemented by the addition of Points of Sale where visitors can find a wide range of products.

Food and Beverages: offering different options of meals and snacks

Merchandising: offering selected products to take home, such as souvenirs and educational toys

Media: offering photos and videos to remember the Kidsarena experience

CHAPTER 3

ROLE PLAYING

At Kidsarena, children ages 1 to 14 have the opportunity of having adult-like experiences while assuming the role of firemen, construction workers, police officers, and fashion designers, among others.

Role-playing is an embedded behavior in children. They perform it naturally without previous learning or adult explanations. Unlike other activities that include directions, such as sports or video games, children only need to watch an adult doing something before beginning to imitate them.

A doll is one of the best examples of role playing, since it represents a kid pretending to be a caring parent to their child. Role-playing is an essential ingredient in the concept's experience.

Role-playing is not only a significant part of the Kidsarena essence, but an aspiration to take it to its maximum expression. This unique way of viewing role-play inspires us to build entire cities with buildings, city blocks, plazas and streets for children to play at being adults, with most of the different professions and trades available in a real one.

Role-play comes naturally to kids. It is a kind of play that has continued across generations. Role-play develops problem solving and life skills as well as helps instill values. Kids arena takes roleplaying to the next level by building a city just for kids — providing a realistic and interactive environment for children play out numerous roles of their own choice. From police officer to performer to pizza chef, kids arena offers over 70 role-playing activities with a range of difficulty to meet the abilities and interests of every child. Pilots navigate airplanes, television anchors read the news, police officers perform detective work and chefs cook up tasty food! When kids work, they earn kidZos, Kidsarena's own currency, so they can pay for goods and services in Kids arena. Getting started is simple: kids pick an occupation, learn about their job, wear a uniform, start earning and spending kidZos, and have fun!



Fig 3.1.1 Role Playing

CHAPTER 4

CHILDREN UNDERSTANDING OF FINACIAL MANAGEMENT

4.1 OUR CURRENCY: KIDOLLAR

Kidollar are issued in paper bills in denominations of 1, 5, 10, 20, 50 and 100. Children receive a 50 kidollar check as part of admission which can be cashed at the bank, allowing our visitors to start spending their kidollar right away, then earning more through the many employments available at Kidollar.

4.2 SPENDING KIDOLLAR

After cashing the check at the bank, our visitors have their kidollar available to spend as consumers in the different establishments at Kidsarena. They can purchase products or hire services. For example, they can go and pay their entrance to the Disco Lounge or get their nails done at the Beauty Salon. Prices for products and services vary according to the principle of supply and demand.

4.3 EARNING KIDOLLAR

As with any economic system, goods and services are purchased with money, and money in return must be earned as payment in exchange of work. Thus, if the kids run out of kidollar they will need to apply for a job and earn a salary. For example, they can be a nurse in the Nursery or serve the city as Firefighters. Salaries for different jobs vary according to the principle of supply and demand.

4.4 SAVING KIDOLLAR

Through the course of using their kidollar, children learn about bank accounts, generating savings and earning interest. They learn how to manage money by going to the bank to conduct business with a bank teller or using an ATM machine to make withdrawals or check their account balance. They can also check their account balance online if they are registered CitiZens of Kidollar as part of the benefits of the B•Kidsarena Program.

4.5 SHOPPING WITH KIDOLLAR

As complement to the educational lesson of monetary management, Kidollar features a redemption-based program themed as a shopping experience. Kids must first earn kidollar before they can spend them and may have to save some in order to afford higher priced items. With their earned kidollar, children can buy

pencils and notebooks for their school, gifts for their friends or decorations for their houses, among others

4.6 INVESTING KIDOLLAR

Another way of earning kidollar is by running investments. Kidollar offers multiple investment vehicles where children can get their kidollar back with an extra interest rate earned according to the time of the investment.

4.7 DONATING KIDOLLAR

Kids also have the opportunity to contribute with their community by donating their kidollar to a cause of their choice, then Kidsarena ensures that their contribution reaches the children-related cause they selected.

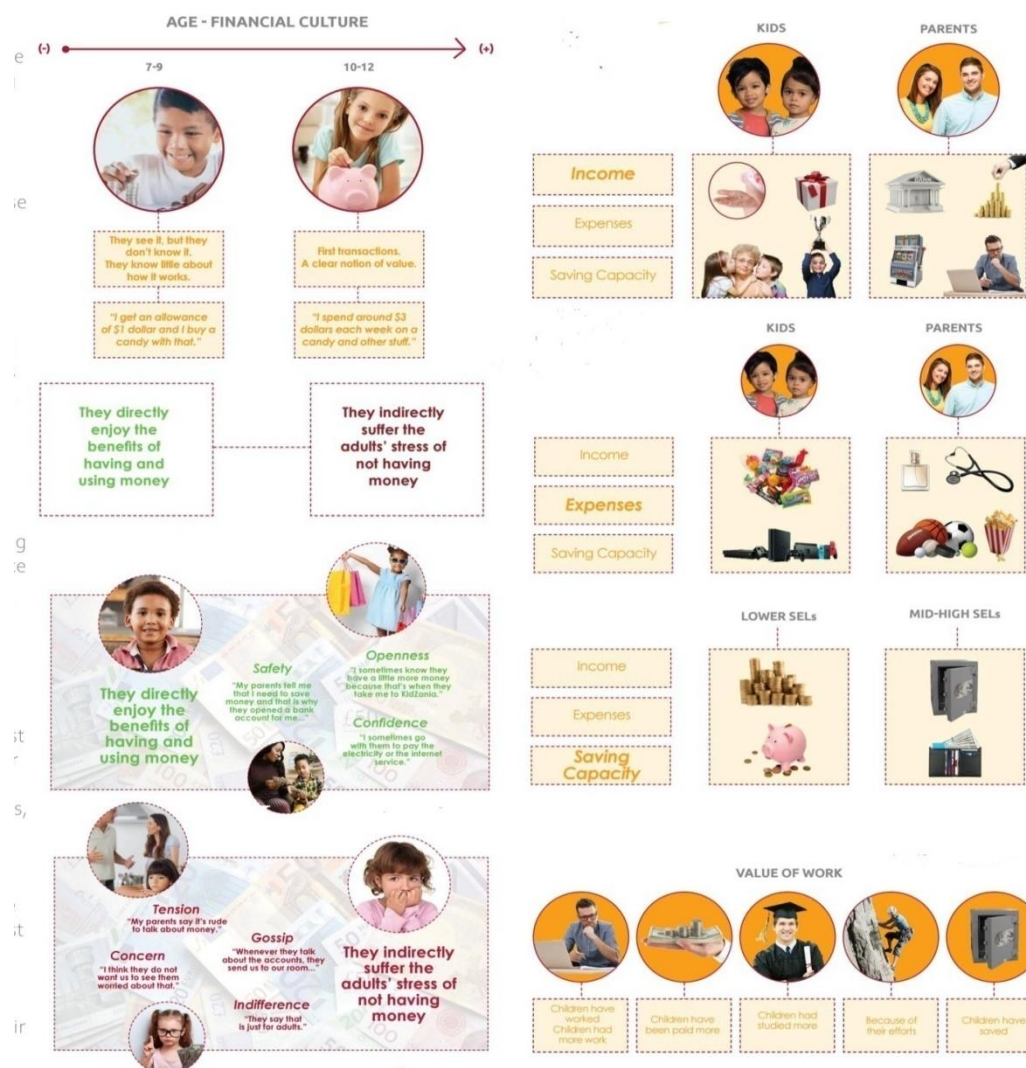


Fig 4.1.1 Donating kidollar

CHAPTER 5

CHILDREN CONCERN ABOUT THE WORLD

First of all, we need to acknowledge that Gen 2 is the first generation to fully experience access to information:

- They have lived mostly behind closed doors due to social conditions (violence, safety & security); and they are 'victims' of this context. They are a self-taught; a media-consumption experts' digital generation.
- The range of media for children available is optional to them: while they do NOT reject these options, this is not the only entertainment choice they have.
- To them, the world is NOT divided by children and adults, since they have not experienced the "NO, BECAUSE YOU'RE A CHILD" argument as dramatically as previous generations did. Instead, the novel upbringing they received has given them access to many more explanations that have sparked a greater interest to learn and explore.
- They see the world with a more interesting view—unburdened by the Filter of being seen "as children": they are acquainted with global issues because they have had the right and ability to explore any topic, they are genuinely interested in.

[It is important to remember the four fundamental characteristics identifying Gen Z worldwide:

- A) 1st 100% digital generation with an expanded < limitless > perspective of the world
- B) Constant search for out-of—home experiences
- C) Deep sense of community
- D) Self-description as agents of change in current world issues

These features define the terms in which they relate to the world:

Discussing wellbeing is easy for children because they see this as a given in their stage — in life. This is why, spontaneous associations relate to academic learning:

- Health
- ~Education

- Nutrition
- Children's rights (identity, protection, education, family)

Examples children associate to the topic include:

- Family time
- Being loved, understood, having freedom to connect and express themselves
- Helping and taking care of their community
- Time to relax and for recreation (books, music, art, sports...)

They understand wellbeing arises from and depends on family (as part of their most intimate sphere), in a natural and accessible way. Raising the possibility of their family being absent makes them afraid because they translate this into:

- Loneliness
- Sadness
- Hunger
- Concern
- Frustration at the government

As a child, which 3 of the following issues are you most worried about?

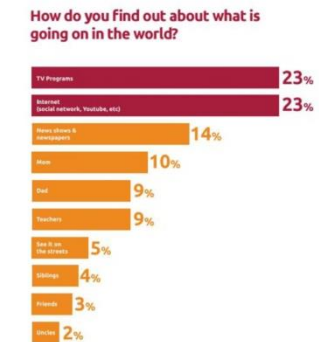
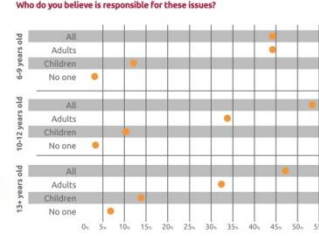
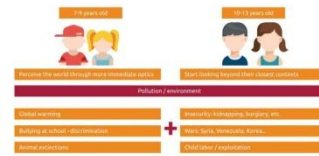
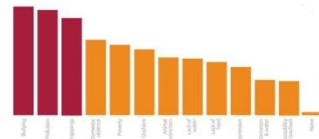
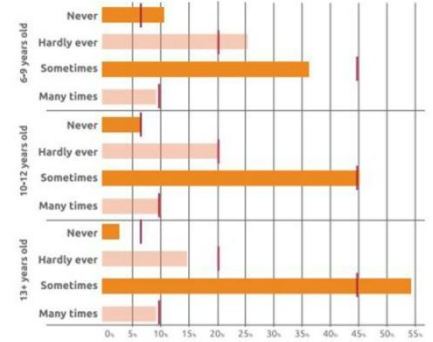
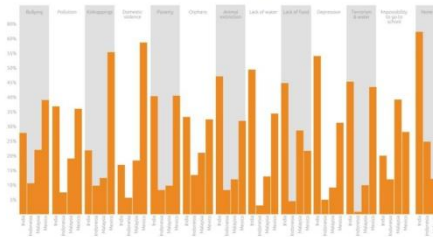
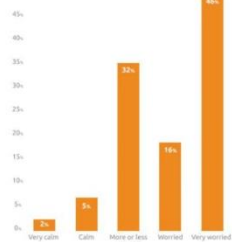


Fig 5.1.1 Issues and analysis

How calm or worried do you feel about the current situation of the world?



How do children explain this connection?



Speaking in general, do you think girls and boys have the same opportunities?

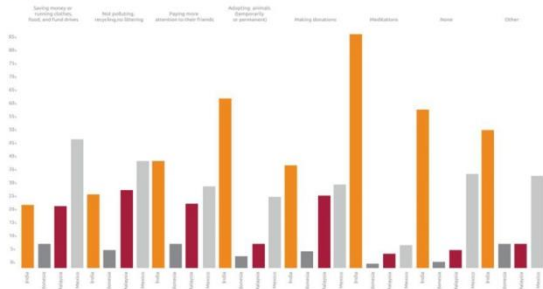
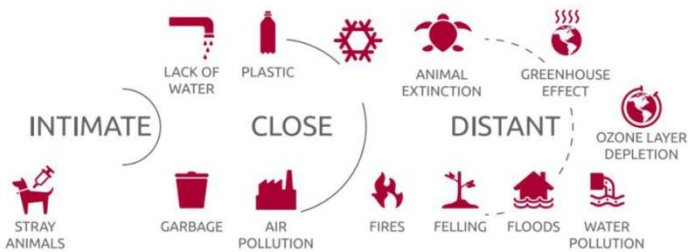
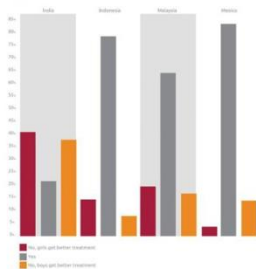


Fig 5.1.2 Issues and analysis

CHAPTER 6

CASE STUDY

6.1 NEOBIO FAMILY PARK

MINHANG, CHINA

Interior Designers: X+Living

Area: 3000m²

Year: 2016

Photographs: SHAO Feng

When we designed bookstores we intended to make reading pleasant and educational, and to turn children's reading area into an amusement park-like place. This time we are designing a real indoor amusement park. Neobio Family Park is located within two European buildings in Building 5, Shopping Street of MinhangXinghewan, Lane 3788, Duhui Road, Minhang District, Shanghai. It is divided into Reading Area, Dinning Area, Sims City, Climbing Area and Party Room. Entering the main entrance, we are surrounded by wavy forests and rolling hills, which are book shelves of the reading area and are the best place for kids to play hide-and-seek. Every tree hole is an exclusive small world for the children. We use small forests and hills to create a free and relaxing reading area where kids feel close to nature. By the window near the forest a leisure reading area for parents is designed..

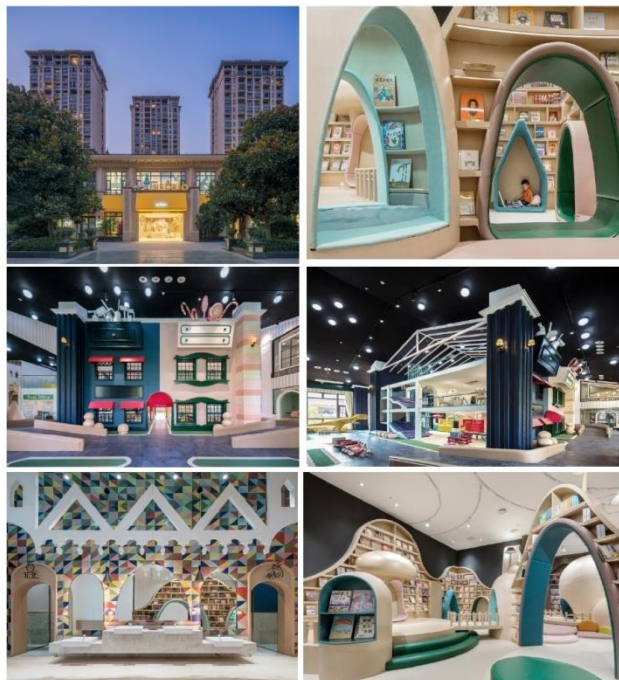
NEOBIO FAMILY PARK



Fig 6.1.1 views. Fig 6.1.2 Interiors views

Through the ocean pool-like stairs we come to the Sims City, where a miniature city is created. Here you could find urban road system, including roads, zebra crossings, street lamps and parking lots. In the middle, a 3-stories house is divided into left and right side, within which there are mini post office, gas station, supermarket, hospital etc.; also there are kids' favorite Play House scenes: kitchen, dress, make up and changing diapers for babies. The kids could go every corner freely in the mini city, and parents could watch their kids having fun at the rest area on the opposite side. Deep inside Sims City, there is a place that "little princesses" love most - Princess Cosplay Area; girls could dress up as all kinds of princesses and take photos. While accompanying their princess, the mothers could get their nails done.

Go across along Time Tunnel, we arrive at the Big Child Area where various slides, climbing racks fill the whole floor and it looks like a huge maze. The most eye-catching part is an S-shaped slide, from which the children could slide directly to the dining area on the 1st floor. Parents could bring their children to enjoy delicious food in the dining area after the children had a great time playing all around. In the dining area, lots of balloon-like hanging Game Boxes are designed, all of which are connected by transparent crawlways, children could have fun crawling all around. There are dining tables around these boxes, allowing parents to take care of their kids while dining. Two VIP rooms are designed for families who require private space.



In the basement, there is the Party Room for kids with various themes such as Indian, desert and Mediterranean. Here, children could hold birthday party in their favorite room. Special King&Queen chair is designed in every party room, making every child the real hero of his party. Neobio takes you into a fairy tale world in reality!

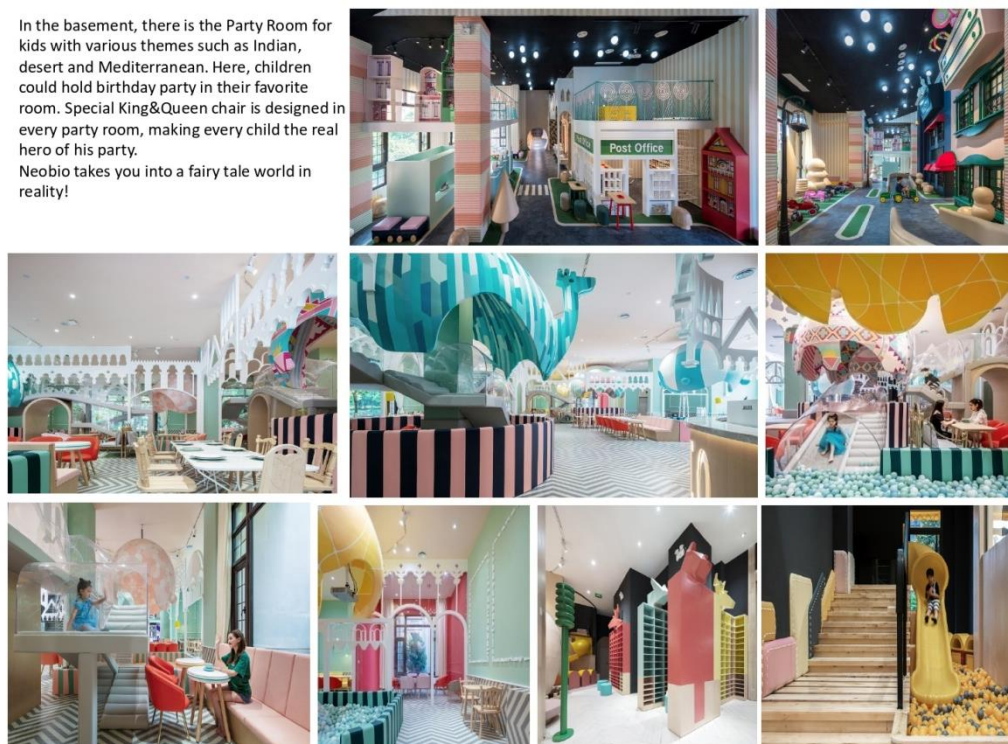


Fig 6.1.3 views

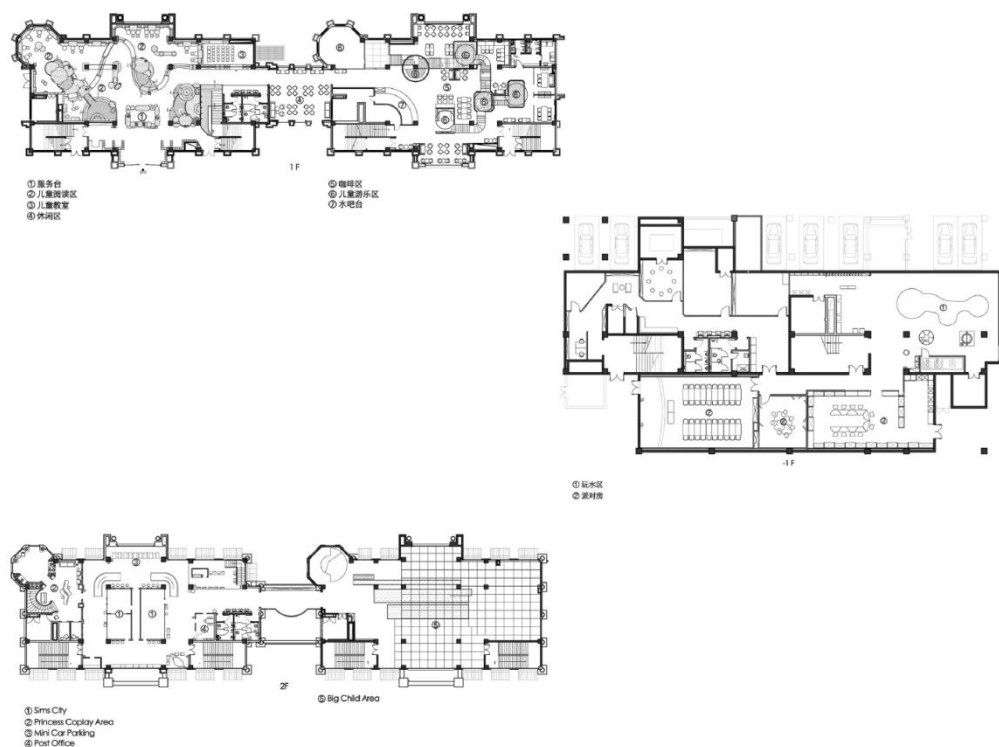


Fig 6.1.4 floor plans

6.2 YUE CHENG KINDERGARDEN

KINDERGARTEN • BEIJING, CHINA

Architects: MAD Architects

Area: 10778 m²

Year: 2020

In 2017, MAD Architects was commissioned to design a kindergarten next to a senior citizens' apartment in Beijing, reflecting the client's "intergenerational integration" ethos that blends pre-school education and eldercare. The subject site, covering an area of 9,275 square meters, consisted of an original 18th-century Siheyuan courtyard, an adjacent replica courtyard built in the 1990s, and a four-story modern building. Following its completion at the end of 2019, the kindergarten now serves as a pre-school education space for 390 children aged from 1.5 to 6 years old.

"When I looked back at my own kindergarten years, and even the ones I saw after I grew up, I always wondered what it is that kids long for the most," said Ma Yansong. "Perhaps it is freedom and love. A kindergarten doesn't always have to offer complex hardware or fixtures, but it must always make kids feel freedom and love – something that leads them to endless possibilities."

YUE CHENG KINDERGARDEN

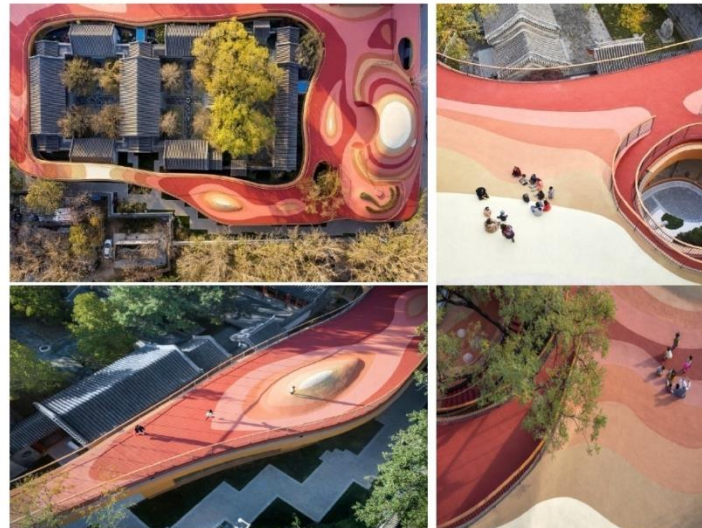


Fig 6.2.1 Exterior views

The transition space from the first floor to the sunken level on the east side of the lobby is cleverly designed as a theater; the top of which is surrounded by a circular wall of bilingual cartoon books. The theater stage doubles as the entrance to a two-level indoor playground, which serves not only as a space for children's activities but also a place for the whole kindergarten to hold arts and sports events.

The triple-entry courtyard house, connected to the new space via courtyards and corridors, serves as a place to host the children's extracurricular cultural, artistic, and creative activities, as well as an office for staff. The eaves and tiles of the courtyards, and the old trees contained within, are filled with a historical and natural atmosphere that is larger than the length of individual life; a point of inspiration and reflection in the children's minds, and a chance to deepen their understanding of history.

The YueCheng Courtyard Kindergarten shows how several seemingly disparate, even sometimes contradictory, elements of architecture from different historical periods can coexist harmoniously while maintaining their authenticity and individuality. What is more, they can work in unison to create a new openness and richness, giving children an objective and realistic perception of their environment. The result is an understanding of how nature and history can bring a sense of inclusiveness to a new place, shaping a community's unique consensus and values.

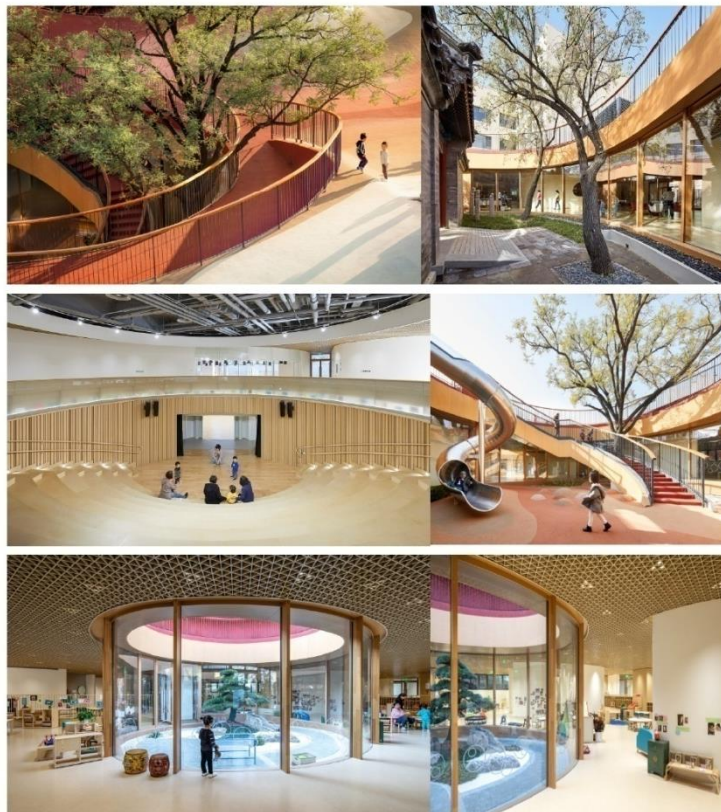


Fig 6.2.2 Interior views



Fig 6.2.3 Planning



Fig 6.2.4 Detail drawing

6.3 THE TETRISCEPTION

KINDERGARTEN • NEW DELHI, INDIA

Architects: Renesa Architecture Design Interiors Studio

Area: 4550 ft²

Year: 2017

Photographs: Vibhor Yadav

Manufacturers: Saint-Gobain, Asian Paints

Renesa Architecture Design Interiors's design ideology to this pre-nursery school raises an argument to the new style of architecture (A Renaissance of Art) for the learning and growth of the little ones. The idea behind architecturally treating this dilapidated space was to create a reaction and response from a young one in order to make them learn from the exterior environment. Learning environments are ever growing and changing. There is a growing awareness among societies and culture for pre-schools to be diverse and provide learning environments through the built form. As learning spaces re-focus on team-based, interdisciplinary learning, they are moving away from standardized, one-size-fits-all approach to teaching. Instead, it is becoming a norm that students learn in a variety of ways, and the differences be supported. Students often learn better by doing it themselves, so teachers are there to facilitate, not just to instruct. Here, the built Tetris-ized environment becomes an enabler and a catalyst to nurture the young minds of

THE TETRISCEPTION



Fig 6.3.1 views

The Architecture was simplified to engage and be free of clutter to ease the interaction between the built environment and the natural surroundings. Due to cost and major structural constraints the existing building frame and shell were left intact though exceptions were made to create additional links between interior and exterior spaces and to highlight the main concept of learning through built ideology. Within this predefined framework, playful architectural interventions occurred (Tetris architectural brick volumes) at the children's scale, creating reading nooks between classrooms, formal/impromptu seating areas and sculpted terrain.

In order to provide three decent sized classrooms with a big discovery room(hall) along with the playground and sandpit arena helped Renesa Architecture Design Interiors find the right structural changes in the existing building and provide the right social environment that supports constructivist educational philosophies and pedagogies. The world keeps changing. The ways of communicating, of learning, of moving evolve. Education is not far behind. It responds to this continuous movement of transformations. Architecture must accompany them; Create spaces conducive to education, spaces capable of transmitting emotions, generating belonging, and facilitating learning in its most natural and simple form.



Fig 6.3.2 Interior views



Fig 6.3.3 Planning

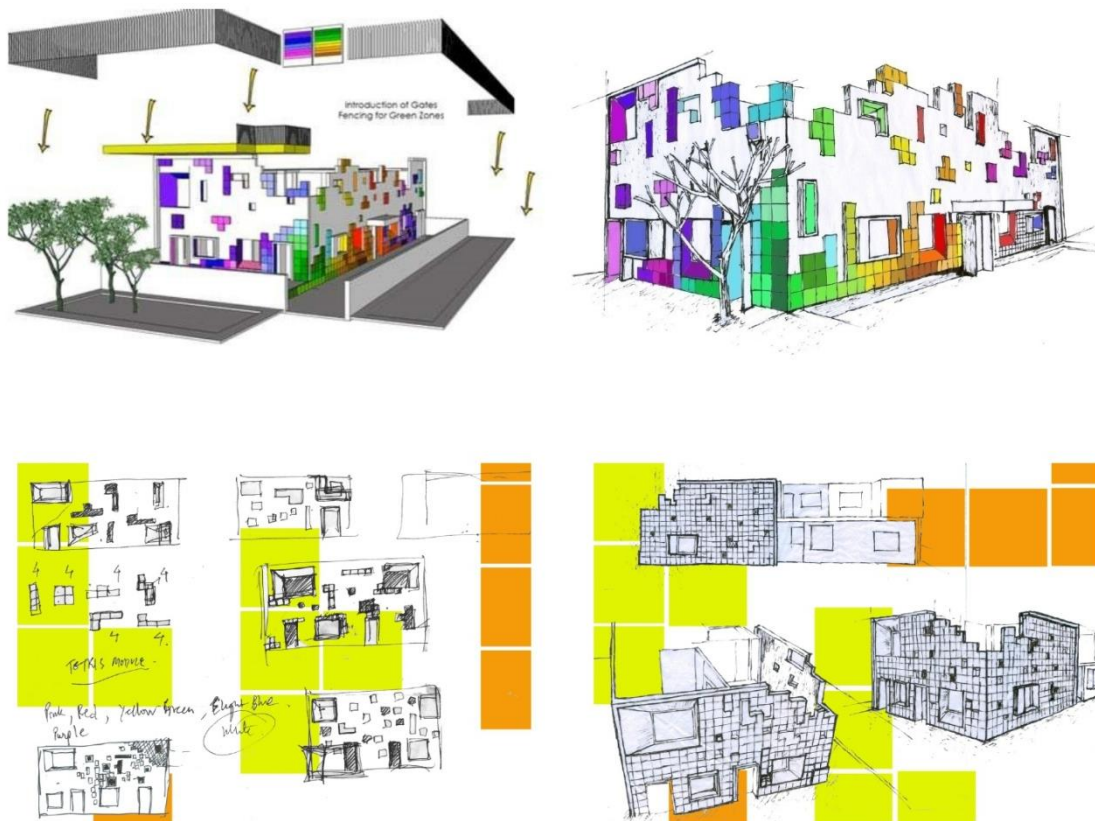


Fig 6.3.4 Concept evolution

6.4 INCHEON CHILDREN SCIENCE MUSEUM

MUSEUM, SCIENCE CENTER • INCHEON, SOUTH KOREA
 Architects: HAEAHN Architecture, Seongwoo Engineering &
 Architects, Yooshin Architects & Engineers
 Area: 14998 m²
 Year: 2011
 photographs: Park Young-chae

INCHEON CHILDREN SCIENCE MUSEUM

Incheon Children's Science Museum is located at the entrance of KyeYang Mountain in Bang Chug-Dong, KyeYang-gu, Incheon, where the nature and city are continuous. The Incheon City claims this project to be the first children's specialized science museum ever built in Korea after 10 years of their long-cherished ambitions to promote the project. Therefore, the concept called 'Sponge that embraces children's dreams' was set up based on the geographical context located at a place connecting the city with nature, main users of children and science exhibition, and program context. The concept of 'Sponge' was applied in all the design fields from start to finish as a keyword which created an integrated environment of architecture, exhibition, landscaping, and interior design. The land for a public facility has repeatedly been relegated to the outskirts of the city drawn by an artificial line called the limited development district from the reality that a space with a size enough for a public purpose in the downtown area cannot be secured. The place for this science museum is the last side of KyeYangSan where the spontaneous residential area and artificial limited development district are interconnected in a old town center.



Fig 6.4.1 Exterior views

The conceptual development was conducted in the direction to realize four icons such as Dream Icon, Eco Icon, Community Icon and Funny Icon. In order to realize the concept, the building shape of tender that is familiar to children, design of irregularity and distinctive perforated elevation (Dream Icon), and diverse outdoor spaces (Eco Icon) where three-dimensional experience is possible for communicating with a city and harmonizing with the building had to be considered. Also the space (Funny Icon) where various sculptures, events and attractions were provided at the central hall connecting all exhibition halls so that many children can experience fun in science, while the flow of site was designed to cross inside and outside of the building naturally (Community Icon). It was intended to become one of landmarks symbolizing Incheon as an exhibition- science museum where children have fun and experience.

The place was a land where the form and quality were changed for its size as much as the capacity needed could be filled with even if it was wide enough to make the exterior space. The volume placed at the boundary between a city and nature created each external space at the east and west where the form and quality were not changed.



Fig 6.4.2 Exterior views

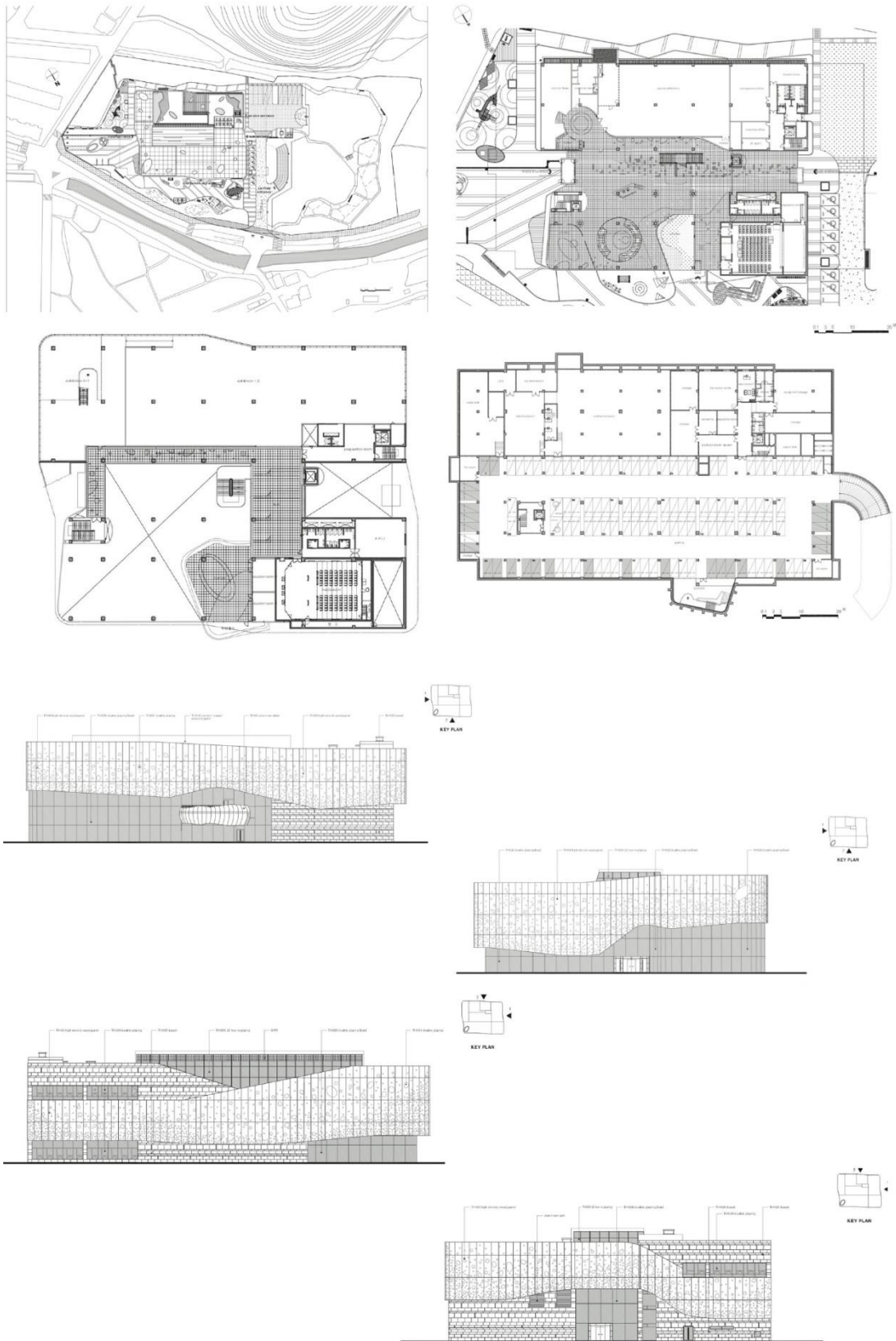


Fig 6.4.3 Plan,elevation,sections

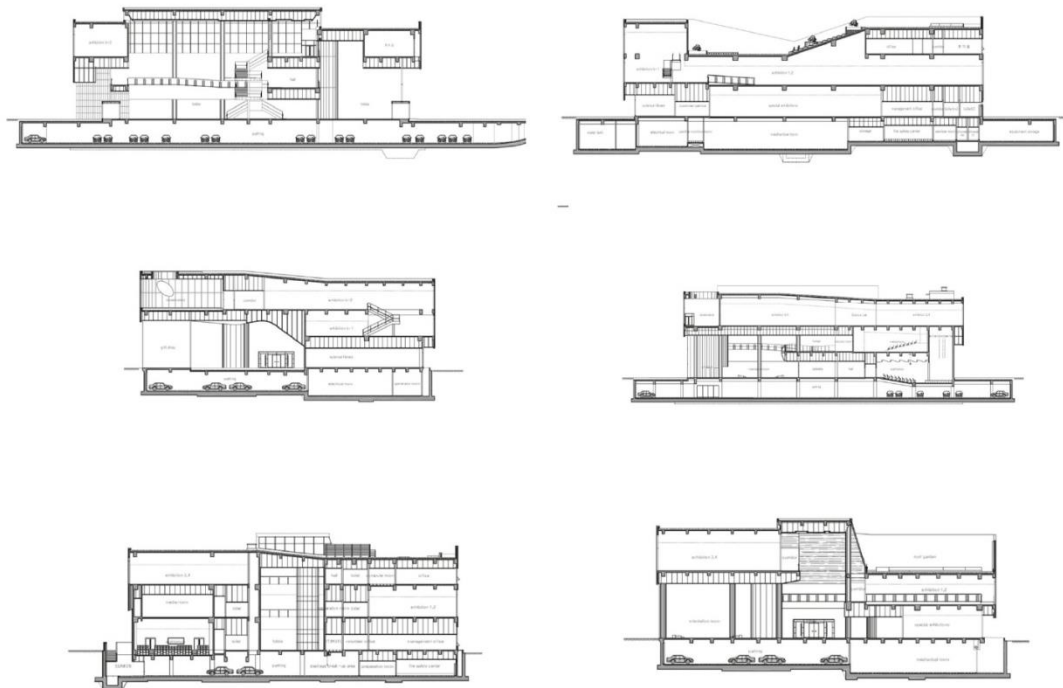


Fig 6.4.3 Plan,elevation,sections

6.5 BEIERSDORF CHILDREN'S DAY CARE CENTER

HAMBURG, GERMANY

Architects: Kadawittfeldarchitektur

Area: 1750 m²

Year: 2013

Photographs: Werner Huthmacher

BEIERSDORF CHILDREN'S DAY CARE CENTER

The two-storey new build is located next to a green area on the inner-city grounds of the Beiersdorf AG in Hamburg-Eimsbüttel. The extremely compact rectangular structure is arranged around a central, two-storey multi-purpose room, which functions as a play area and gathering space. The inspiration for the design came from the history of the Beiersdorf AG in that the kindergarten resembles an abstract version of an apothecary cabinet. Featuring a shelf-like structure, the facade caters for a variety of functions and requirements and, at the same time, creates a light and transparent atmosphere indoors. The large window formats provide perfect conditions for play and educational work.

The inserted coloured frames shape and structure the facade on the outside and offer the children a sense of direction and a way of identifying with their group. On the inside, the frames are accessible and supplement the play area with exciting elements: platforms, boxes, spaces to sit, climb and play, designed to stimulate the children's creativity and imagination.



Fig 6.51 exterior views



Fig 6.5.2 Interiors views

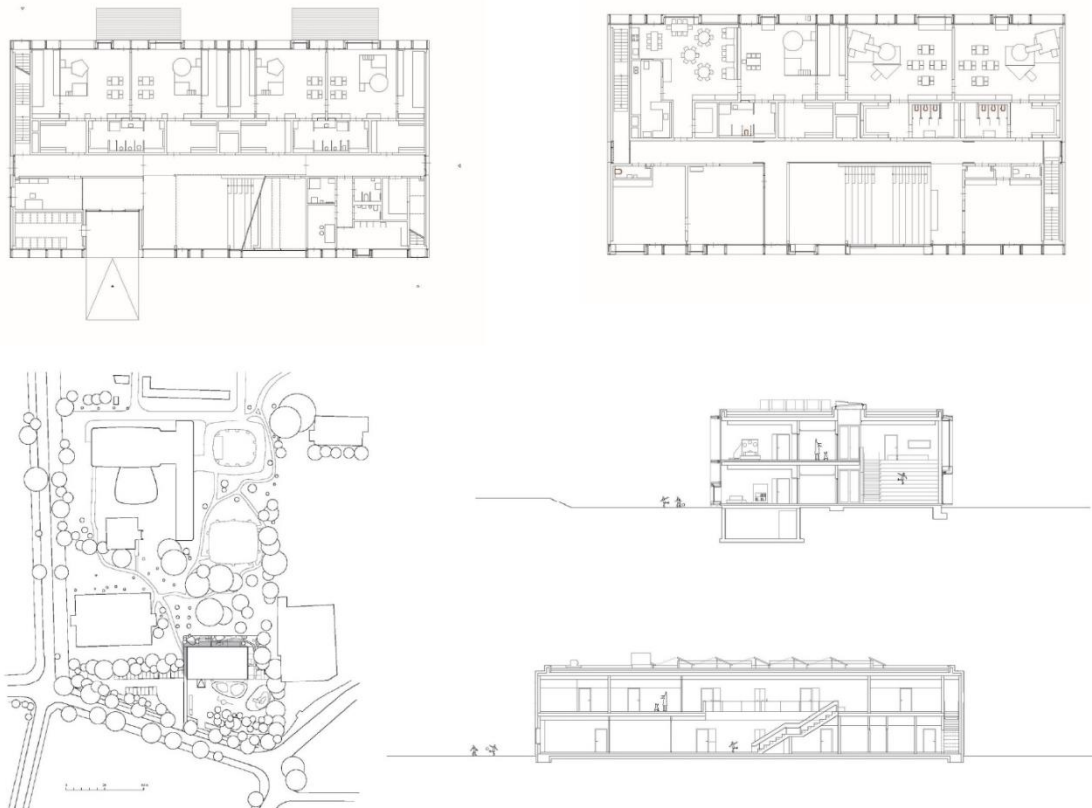


Fig 6.5.3 Planning

6.6 YUE CHENG KINDERGARDEN

PARK • DENVER, UNITED STATES

Architects: Dig Studio

Area: 48562 m²

Year: 2020

Photographs: David Patterson, Paul Wedake, Vienna Vitek

Intergenerational play is the focus at Paco Sanchez Park, with the goal of improving physical, mental, and societal health. This is manifested through accessibility, inclusivity, different levels of physical challenge, and spaces to support community gatherings and events.

Community input identified the desire to honor the park's namesake, Paco Sanchez. Sanchez launched the first Spanish language radio station in Denver in 1954, going on to become a beloved civic leader and State Representative. His love of music and connection to the community as a DJ inspired the design team to identify broadcasting as the primary theme. The spirit of the park promotes the rich Hispanic legacy of the community through the use of color and form. Public art and one-of-a-kind play elements provide Paco Sanchez Park a strong sense of place.

YUE CHENG KINDERGARDEN



Fig 6.6.1 views

Inspired by the city's original competition, Re-Imagine Play, Paco Sanchez Park at long last realizes the Play Loop concept originally proposed for City Park. The redesign organizes a series of play pods along a continuous zig-zag loop path to provide ADA access from the top plateau down the slope to a flat expanse 45 feet below. Launching from the highest point on the site, a play bridge leads to the iconic Microphone play tower accentuating the top of the play loop. The loop's zig-zag paths and play pods flank a Music Bowl and Record Stage. The bottom of the loop is anchored by the Plaza and Recreation Building and spaces for various recreation activities including playfields, basketball, and skateboarding.

Paco's love and passion for music are celebrated throughout the park, with multiple play features that help tell the story, including the Mic Tower, Gramophone Slide, Frequency Climber, and a musical bridge at the top of the play loop. The design takes advantage of the park's natural terrain to create a sloped lawn amphitheater, the Music Bowl, at its center. At the base of the slope, the Record Stage engraved with Paco's radio station name and its founding year enables programming such as outdoor movies and concerts during summer months. Surrounding the Bowl, a series of play pods provide a unique experience for kids to play while their families enjoy performances.



Fig 6.6.2 planning

6.7 YUE CHENG KINDERGARDEN

RESTAURANT • QINHUANGDAO SHI, CHINA

Architects: Wutopia Lab

Area: 1000 m²

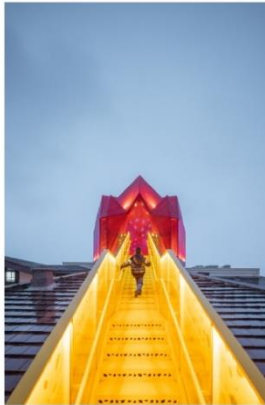
Year: 2018

Photographs: CreatAR Images

Wutopia Lab was commissioned by Aranya to renovate part of club house into a restaurant for kids. We hope to create a neverland for kids in this space of less than 1,000 square meters.

By digesting the physical properties of materials, we hope to create a place that loses material texture and spatial orientation. The carbonate polymer material used in the “One person’s gallery” case was used in combination with light to create an experience of losing sense of size and texture. Bubbles, colorless and transparent, will refract the rainbow, and are fleeting and unpredictable, but kids love them. The kid’s restaurant should be a polycarbonate neverland.

We used polycarbonate panels to wrap the original facade, a mixture of prairie villa style and contemporary art deco-style, creating a new translucent facade. We put vertical greening and large staircases between the old and new façades. This hierarchical facade was regarded as a complete facade.



YUE CHENG KINDERGARDEN

Fig 6.7.1 views for kinder garden

We re-organized function and streamline. Directly from the outdoor stairs, first stepping into the light forest on the second floor. Under the soft lighting of the light ceiling, the matte PVC pipe encloses a circular dining hall and two private dining room surrounded by polycarbonate panels. Circular, diffuse lighting, white tones make you losing sense of texture, scale, and direction to this space.

You can enter the ground floor under the starry skies along the grand staircase. Under the starry sky ceiling, we created a playground for kids using PVC hollow balls, glass fiber cloth, marine plastic balls, artificial stone and floor glue. With a magic mirror as the border of the game space, we try to distort the realism of the place, as if time is not passing.

At the edge of the main space, there is a pink memory bathroom, a sea sound bathroom, a mirror pool, a stainless steel slide, a trampoline, a bubble tree, and a mysterious picture book area. They are the corners hidden in this neverland that waiting for kids to discover for themselves.

The most important climax of the entire restaurant is the red flying house built on the roof with double perforated aluminum panels. Following the yellow trace, going through a stainless steel floor, bypassing the bubble tree, twisting toward the ridge, and you can see the light is getting brighter and brighter. This flying house could become an obvious sign of the park easily. It could also be a lighthouse, pointing out the direction of fun zone.

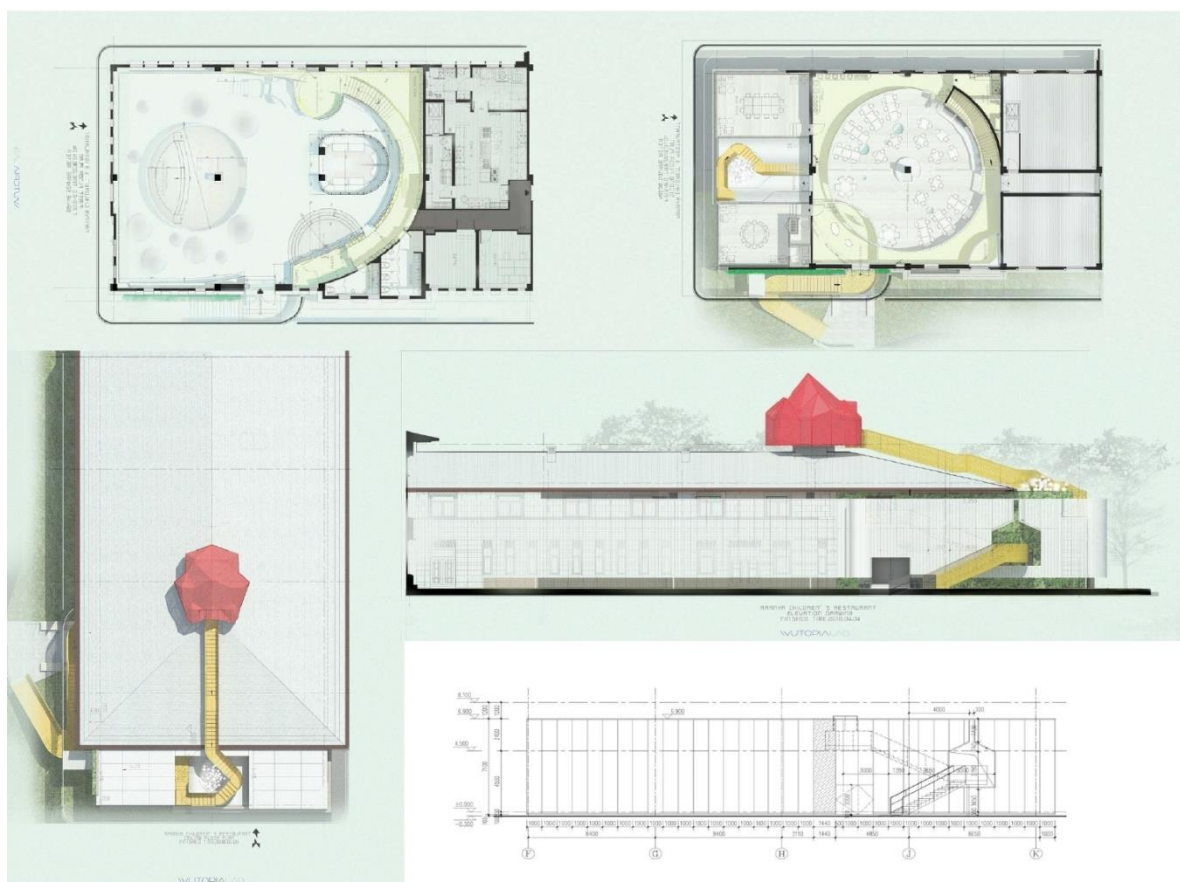
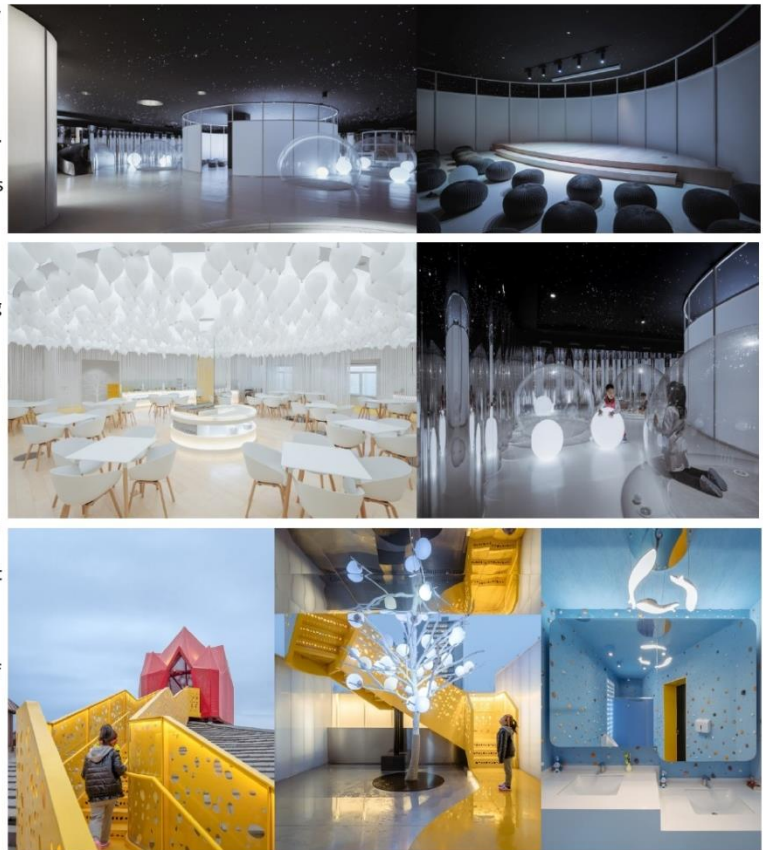
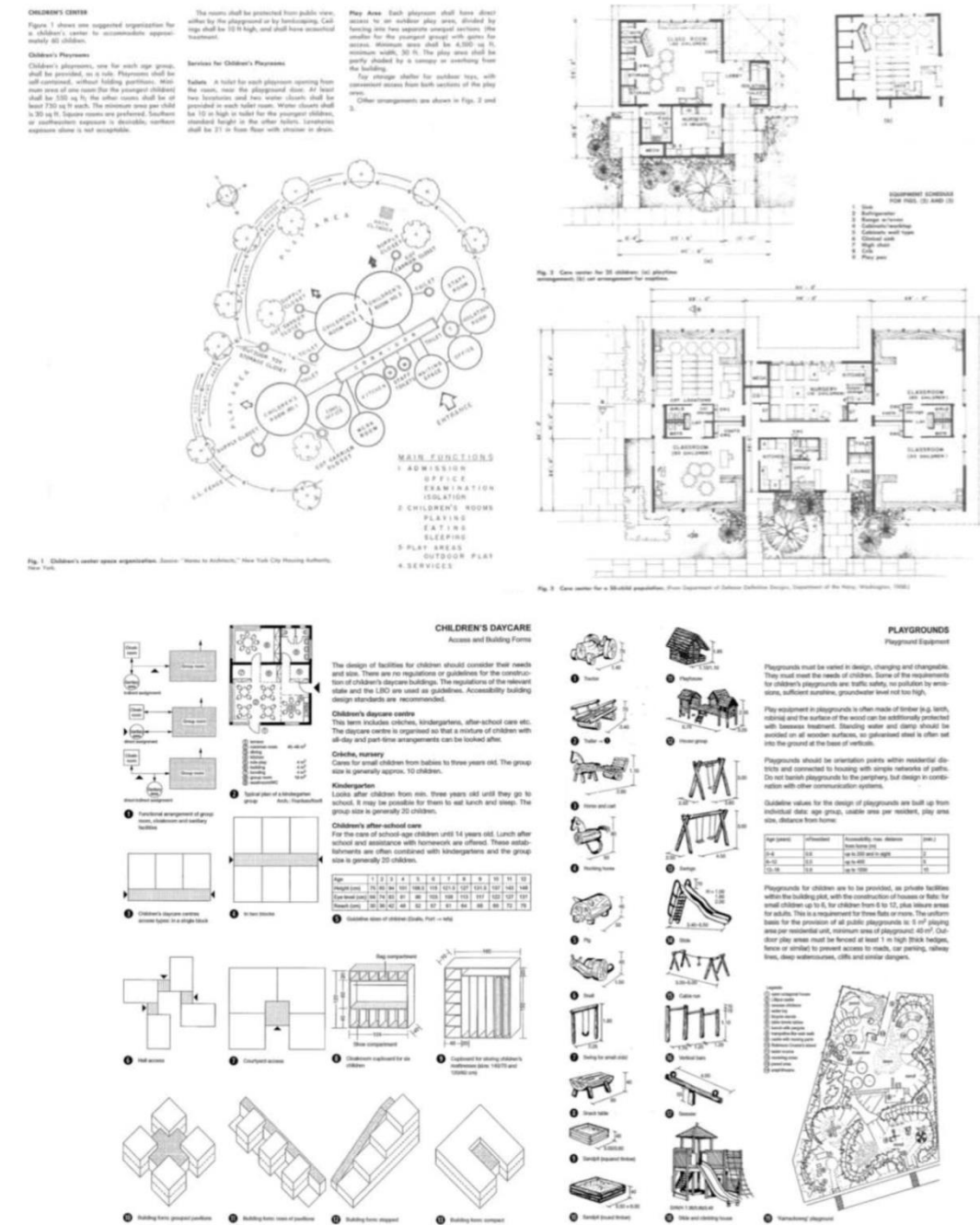


Fig 6.7.2 Planning concept

CHAPTER 7

STANDARDS



CHAPTER 8

PROGRAMMING

8.1 CIRCULATION PLANNING

Movement of visitors and members of the public need to be carefully designed to ensure clear directions, convenience and safety. Particular attention should be given to the peak flow of people, particularly on degree from each main area of assembly, and the local code requirements of means of escape in case of emergency. As a rule, the aim is to ensure evacuation of any room or level within 2.5 minutes

8.2 CORRIDORS AND PASSAGES

Corridors must be designed to serve as means of escape in the event of fire and lead to safe exits from the building. Minimum width, fire – resistance standards, (usually 1 hour), limits to combustibility and surface flame spread and emergency requirements apply. The walls and flooring must resist marking and damage, and ceiling should allow acoustic absorption and access to services.

Long corridors and large areas of impersonal spaces – other than for emergency use- should be avoided. Whilst continuity of passages must be maintained for directional purposes, some variation in spaces and finishes should be introduced, including “pockets” of lounge seating for informal gatherings between events. Extensive glazing of promenades, lounge and restaurants provides a refreshing contrast to the artificial lightings of the internal areas

Landscaping and predominantly restful colours (pale blue, green) are often used in the décor of the ancillary areas. Illuminations in corridors should allow for transitions from mandatory minimum requirements for close seating in an daylight to interior levels, and change from day to night time requirements

8.3 SPACE REQUIREMENTS

Mandatory minimum requirements for close seating in an auditorium and other places of assembly are specified in codes and regulations concerned with fire safety, floor loading and environmental health requirements, but these are generally inadequate for planning purposes. It is more appropriate to use typical space standards in the initial allocations, although the final capacities will vary with the shape and actual dimensions of the rooms as well as the layout of furniture.

As a rule, smaller rooms are less space efficient than the larger halls. Two sets of figures are indicated; minimum areas assuming close seating with limited space, and space allowing for the higher standards of comfort and

greater flexibility for conference use. In each case these allow for internal circulation.

8.4 TYPICAL SPACE MINIMA

• TYPICAL SPACE MINIMA

SPACE PER PERSON	M.SQ	NOTES
SEAT DENSITY	0.8 - 1	AREA INCLUDING ACTIVITY AREAS
LINKED SEATS	1.0 - 1.2	LARGE FLAT – FLOORED OR BALLROOM
SEATING LAYOUT	1.2 - 1.6	FOR MEDIUM SIZED TO SMALLER ROOM
ACTIVITY AREA SEATING	1.6 - 2.2	WITH INDIVIDUAL TABLES IN LARGE HALLS
ACTIVITY AREA LAYOUT	1.8 – 2.4	IN MEDIUM – SIZED ROOM
LOBBY RECEPTION HALL	0.5	SHOPS

PROGRAMMING

KEY USE	KEY ZONES	INDIVIDUAL SPACES	
Kids arena is an interactive city made for children 1-14 that combines inspiration, fun and learning through realistic role-play. Kids can independently explore a scaled indoor city of over 11,000 square meters with more than 100 exciting careers that they can try.	• COMMON AMENITIES • ACTIVITIES • FOOD & DRINKS • SHOPPING • WAY FINDING • OUTDOOR PLAY AREA • SERVICES • PARKING	COMMON AMENITIES	RECEPTION LOUNGE / WAITING AREA
		ACTIVITIES	WORK STATIONS AMENITIES CULTURAL CENTER
		FOOD & DRINKS	RESTAURANTS CAFÉ KITCHEN PLAY AREA
		SHOPPING	DRESS SHOPPING DEPARTMENT STORE BOOK STORE
		WAYFINDING	FIRE EXIT STAIRS LIFT
		OUTDOOR PLAY AREA	GROUNDS OAT
		SERVICES	BATHROOM PARENTS / MEETING POINT BABY CARE FIRST AID ADULT LOUNGE
		PARKING	GUEST PARKING STAFF PARKING

REQUIREMENTS

S.NO	KEYZONES	INDIVIDUAL SPACES	AREA SQ.M
1	COMMON AMENITIES	• RECEPTION • LOUNGE • WAITING AREA	350 125 125
2	ACTIVITIES	• TV STUDIO • AIRWAY AVAIATION ACADEMY • ADULTS AREA • BIRTHDAY ROOM • RESIDENCE • WATER AID SCIENCE LAB • KINDERGARDEN • KIDS KITCHEN & PET WELLBEING CENTER • THE CLUB HOUSE • POLICE DETECTIVE AGENCY • AIR CONDITIONING SYSTEM • JUST DANCE CLUB • FASHION RECYCLING FACTORY • DENTIST • COURIER SERVICE • DEPARTMENT OF UNIMAGINABLE (FASHION) • CRICKET CLUB • MUSIC STUDIO • SERVICE STATION • THEATRE • H&M FASHION STUDIO • BIGBAZZAR • SPA & SALOON	200 200 100 170 100 100 175 375 200 100 100 75 225 175 75 190 200 175 150 450 350 350 75

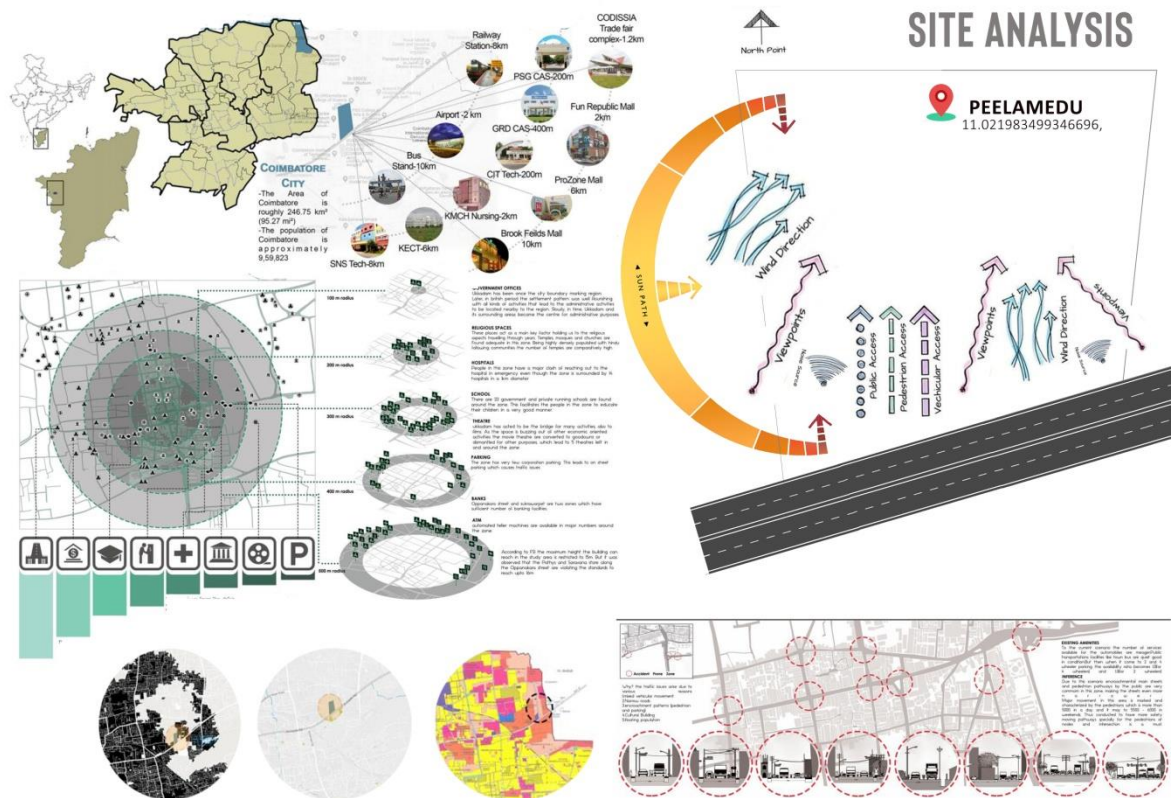
S.NO	KEYZONES	INDIVIDUAL SPACES	AREA SQ.M
2	ACTIVITIES	- CITY TOUR BUS STAND - CLIMBING BUILDING - NEWSPAPER OFFICE - RADIO STATION - EMPLOYMENT OFFICE - CUSTOMS AND IMMIGRATION - STARLINK SPACE STATION - FACE PAINTING STUDIO - BANK - VAULT - POLICE STATION - UNIVERSITY - LIBRARY - FIRE AND RESCUE - ACCIDENT & EMERGENCY - SURGERY & MATERNITY WARD	75 100 100 100 100 125 200 75 200 50 100 220 100 125 125 150
3	FOOD AND DRINKS	- FOOD COURT - COFFEE SHOP - RESTAURANTS	450 100 250
4	SHOPPING	- STORE - DUTY FREE STORE - PICTURE AIR PHOTO STORE - PASSPORT OFFICE - ANNUAL PASS OFFICE	75 75 75 100 100

S.NO	KEYZONES	INDIVIDUAL SPACES	AREA SQ.M
5	WAY FIND	- FIRE EXIT - STAIRS - LIFT	3 FIRE EXITS 2 STAIR CASE 4 LIFT
6	OUTDOORPLAY AREA	- SOCCER GROUND - OAT - CRICKET GROUND	2000 500 2000
7	SERVICES	- BABY CARE - FEMALE RESTROOM - MALE RESTROOM - BOYS RESTROOM - GIRLS RESTROOM - PARENTS / MEETING POINT - FIRST AID - BUGGIES AND LOCKER - INFORMATION KIOSK - DRINKING WATER FOUNDATION - ATM	125 550 550 550 550 125 75 75 75 75 50
8	PARKING	- VISITORS PARKING - STAFF PARKING	2000 750
	TOTAL		18130

SITE ANALYSIS

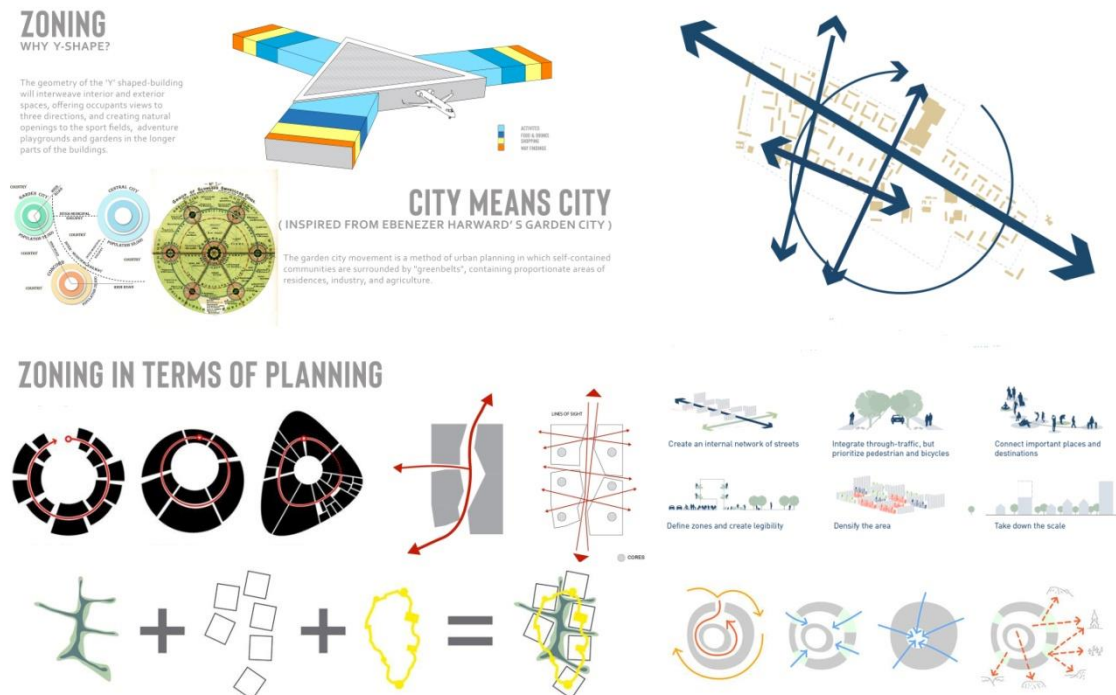


Fig 9.1.1 Site analysis

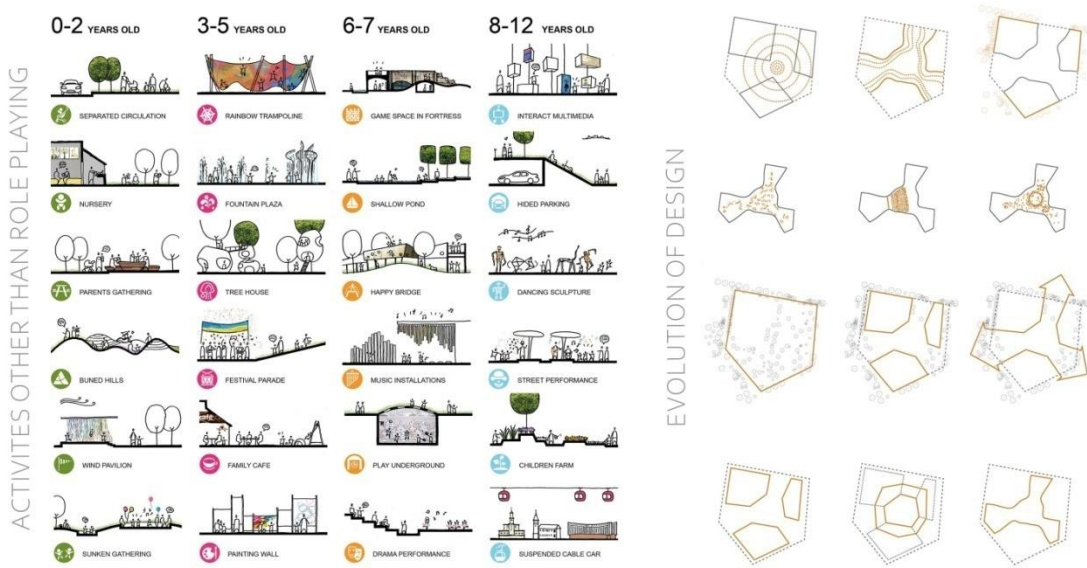


CHAPTER 1

ZONNING AND CONCEPTS



CONCEPT



3621039 | 2016-2020
R KARTHIKEYAN
S21PROJ2
DEPARTMENT OF ARCHITECTURE

KIDS ARENA
COIMBATORE

THESIS 2021
SATHYABAMA INSTITUTE
OF SCIENCE AND TECHNOLOGY

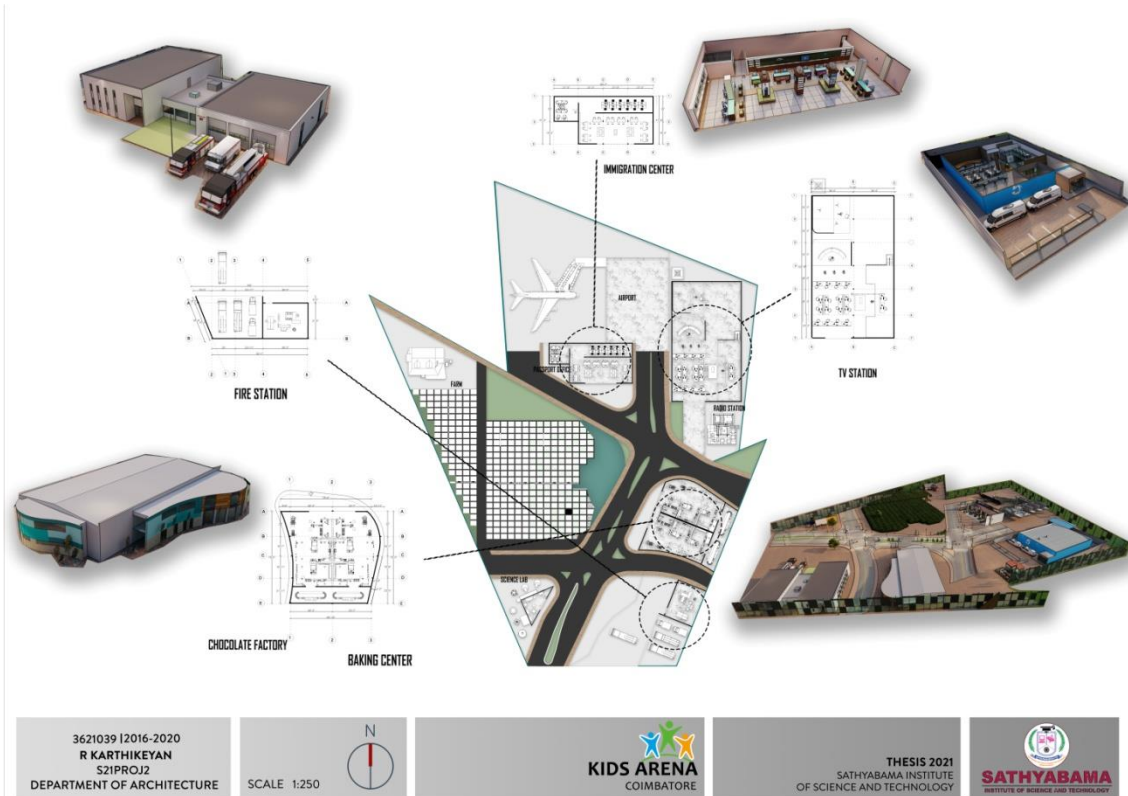
SATHYABAMA
INSTITUTE OF BUSINESS AND TECHNOLOGY

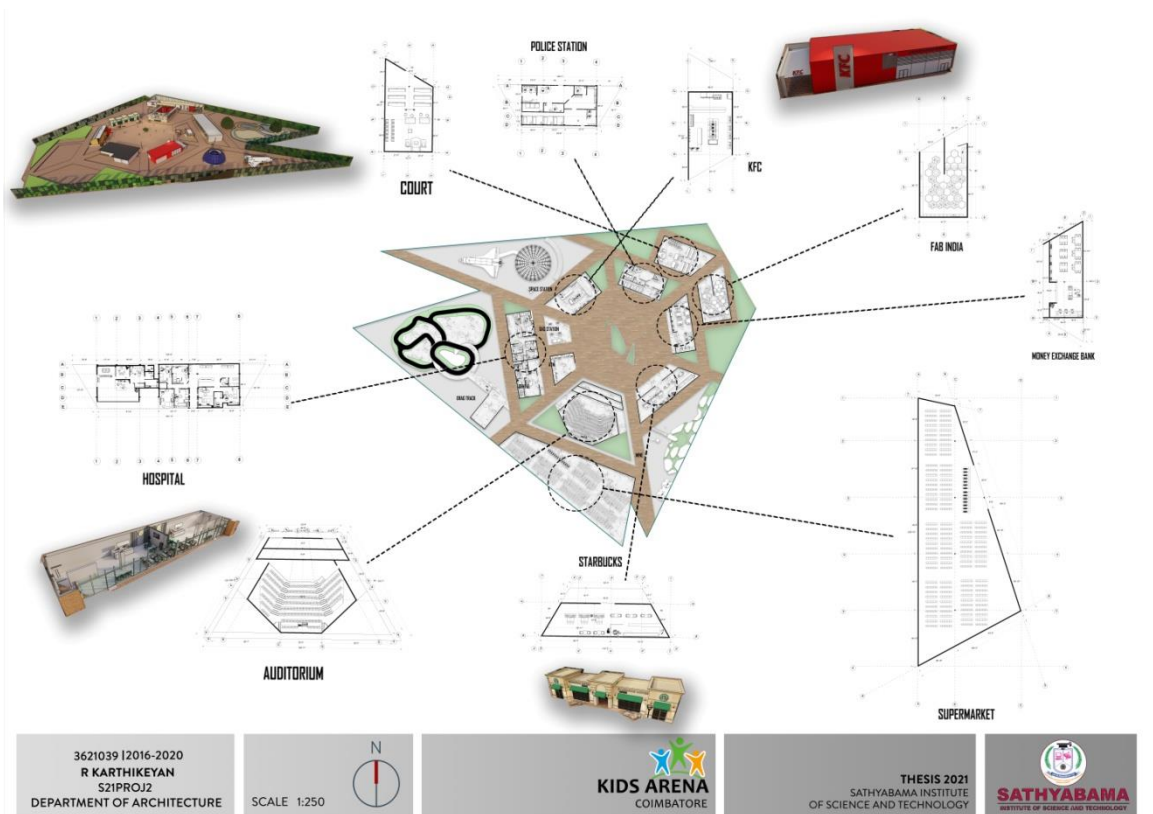
CHAPTER 11

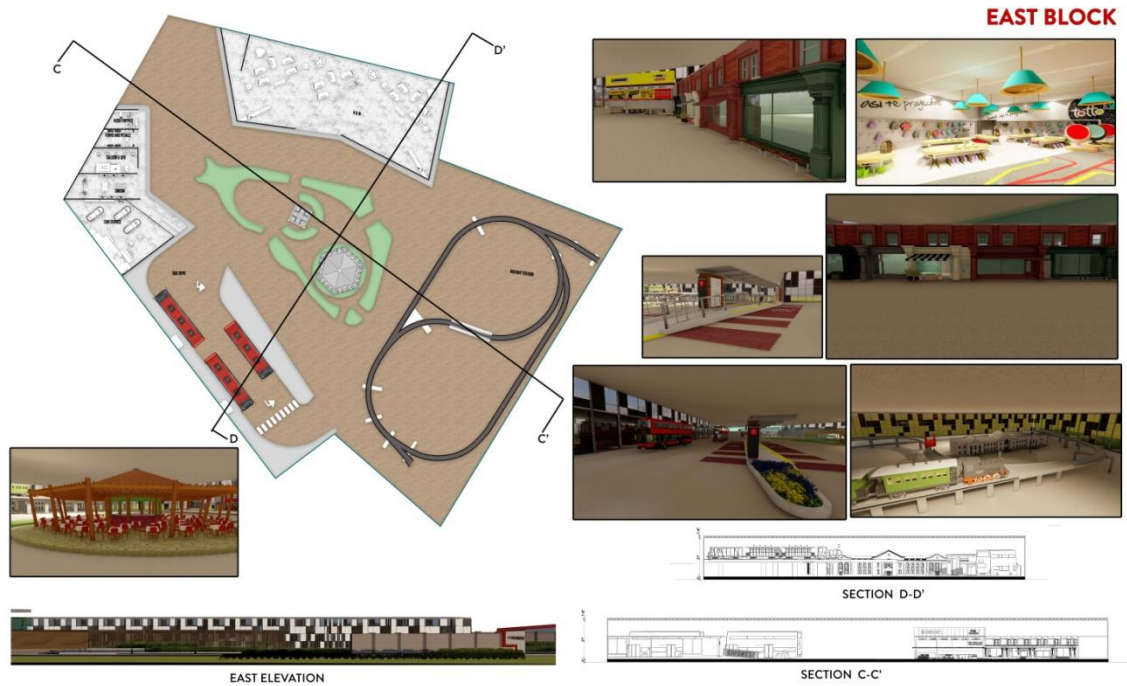
PLAN, ELEVATION& SECTION



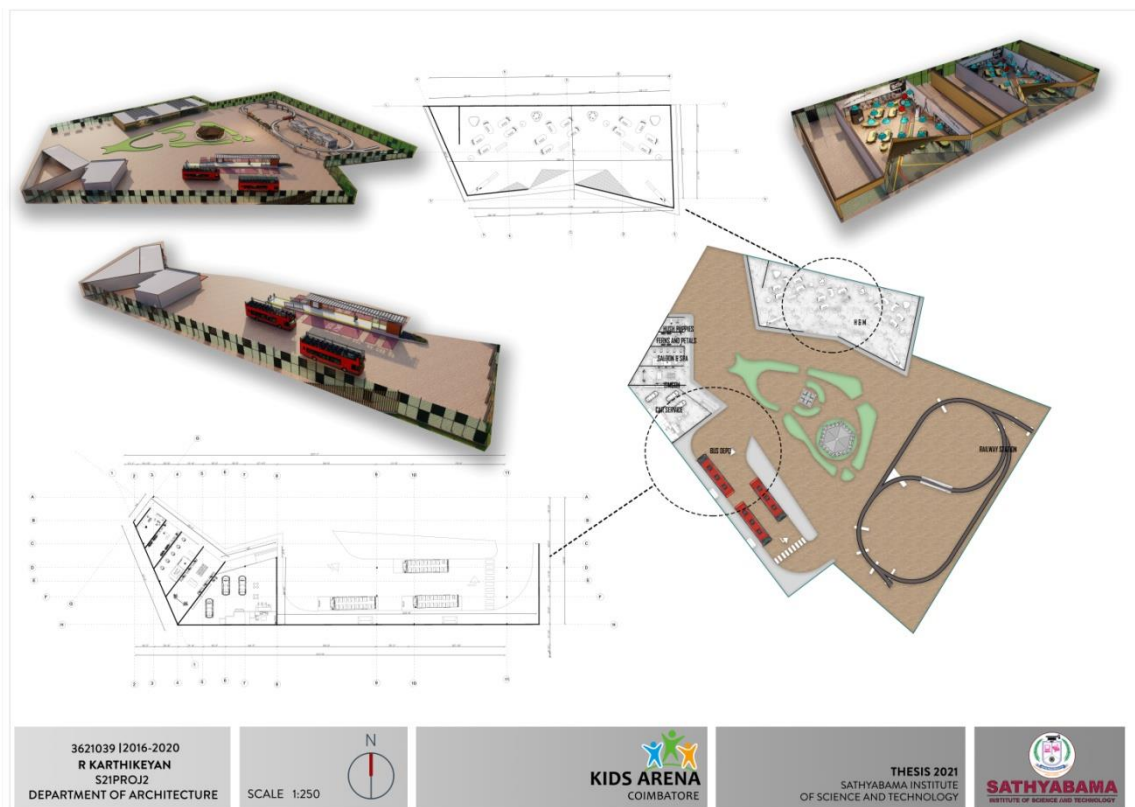








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