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INTERACTIVE SCHOOL FOR CHILDREN

Project of the rehabilitation of the building
in Largo dos Lóios in Porto

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Natalia Ziurkowska

Project created under orientation
of Prof. Maria Milano and co-orientation
of Dr. José António Teixeira

Palavras-chave

Crianças, educação, história, contemporâneo, arquitectura, diálogo

Resumo

Vivemos num mundo multicultural, democrático e globalizado onde a medicina, a genética, a tecnologia, a gestão de negócios e a exploração do espaço se desenvolvem rapidamente. A tecnologia informática e a proliferação dos bens materiais oferecem variadas possibilidades de melhorar as nossas vidas. As pessoas tornam-se cidadãos do mundo, seres cosmopolitas que são permanentemente confrontados com diferentes culturas, costumes e tendências.

Viver, estudar e trabalhar nas cidades da Europa ou do mundo já não é um problema. Neste acumular de experiencias múltiplas e multidimensionais esquecemos muitas vezes as crianças. Contudo, é extremamente importante prestar maior atenção aos mais pequenos, no sentido de as ajudar a compreender o mundo em que vivem, dar um maior apoio ao seu crescimento e desenvolvimento. O papel das escolas, das instituições educacionais e dos centros de ocupação dos tempos livres é fundamental para uma educação bem estruturada, garantindo o conhecimento e a constrição uma sociedade mais consciente. Os programas de educação arquitectónicos, que se estão a tornar cada vez mais populares na Europa, ensinam às crianças o seu rumo no mundo globalizado e as suas responsabilidades para com os que as rodeiam.

As instituições escolares deviam, por isso, focar a sua atenção na educação arquitectónica, tendo em mente que uma juventude educada resultará numa sociedade que será consciente das futuras ameaças à civilização. No sentido de se educarem cidadãos com capacidade para gerir o seu tempo, para serem responsáveis pelo que os envolve, pela ecologia e pelo património cultural, pessoas que não temem participar em actividades locais e focadas no conforto global de todos.

Como resultado destas observações do mundo circundante e do lugar das crianças, se propõem a Escola Interactiva para Crianças, um espaço para o desenvolvimento onde se acentua a educação arquitectónica. A maneira como as crianças percebem a arquitectura, como interagem com o espaço, como as cores estimulam as suas emoções, constituem as razões do projecto proposto.

O projecto insere-se num contexto citadino onde um edifício do séc. XIX ganha nova vida, transformando-se numa escola interactiva para crianças no Largo dos Lóios, no Porto. A preexistência, "congelada" ou recuperada (as portas, as escadas e corrimão, o tecto, alguns fragmentos de papel de parede com os seus elementos decorativos etc.) e a proposta de novos elementos convivem num espaço estratificado, onde memórias de vivencias passadas e novas funções produzem ambientes densos e estimulantes. O espaço é organizado por layers horizontais que se caracterizam, individualmente, por uma cor que, por sua vez, define a sua função e proporciona diversas estimulações sensoriais. O elemento vertical, o corpo de escadas, de cor branca, potencia o contraste cromático entre pisos.

Key words

children, education, history, contemporary, architecture, dialogue

Abstract

We live in a multicultural, democratic and globalized world where medicine, genetics, technology, business management and space exploration develop rapidly. Computer technology, development in material goods and constructions give plenty of possibilities to improve our lives. People are becoming world citizens, cosmopolitans who are permanently confronted with different cultures, customs and tendencies.

Living, studying and working in the cities of Europe or of the world is not a problem any more. In the contagious rush for mammon and success we forget about the youngest. It is extremely important to pay more attention to children, to help them understand the world they live in and to pay more attention to their growth and development. The role of schools, educational institutions and after-hours centers is extremely important in educating conscious, knowledgeable and strong society. Architectural education programs, which are getting more and more popular in Europe, teach children their way in the globalized world, the responsibilities for their surroundings and for other people.

School institutions should focus their attention on architectural education of young people, having in mind that educated youth will result in society that will be conscious of civilization threats in the future. It will educate people able to manage their time, responsible for their surroundings, for ecology and cultural heritage, people who are not afraid of participating in local activities, and focused on general improvement for the good of all. Resulting from my observations of the surrounding world and a child's place in it, I created "The Interactive School for Children", a place for youth development where architectural education is accented. The analysis of the way in which children perceive architecture, of the way in which they interact with space, how colors stimulate their emotions, inspired me to propose the conceptual interior.

Acknowledgment

I would like to express my gratitude to the professors of Escola Superiores de Artes e Design in Matosinhos who create an innovative, inspiring, international school of art and design in Porto. I had a pleasure to work with, observe and learn from people of vast knowledge, open minds and appetite for life and creation. I would like to thank them for helping me and other foreign students build a “bridge” between countries, languages, to diminish cultural differences and turn them into values. To the school crew for giving us, students, perfect conditions for development, studying and exchanging experiences among each other.

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Introduction

We live in a developing and globalized world where changes – economical, social and interpersonal – happen rapidly. The expectations of people and our surroundings are growing. The world our children will live in will fluctuate rapidly and will be slightly different and more complex than the one we live in now. Innovative thinking, creativity, ability to adapt into new situations and to believe in oneself will be required. It will be necessary to invest permanently into one's development, knowledge and self-confidence to achieve success. The social communication skills, the ability to find oneself in new surroundings, in a different culture will be important for children so they can lead a satisfying and creative life.

The parents' world is also changing. Because of the big range of skills to develop, the competition in the market, parents' awareness of the necessity of investing in their child increases. At the same time, parents want to ensure that their children stay under attentive and professional care during their lessons and activities.

Understanding these needs, both for children development and their parents psychological comfort, schools, after-hours centers, kindergardens should maintain a cooperation with architects, city planners, designers, as well as with children, teachers and parents. The participation of children in the design process as a way to better understand the target's needs is extremely important. It should be important to share the responsibility for the place that belongs to all of them. At the same time children benefit by learning about the process of the creation and construction, gain knowledge about applied and sustainable materials, sensitivity to color, light and texture. Knowing that children's psychological development is most rapid in the first fife years of life, we need to to pay attention to the spaces they grow in. It is equally important to build personal relations with children which will result in their creativity and positive thinking. With this in mind adults should take care of suitable conditions in which the young ones are stimulated and encouraged to learn and explore the world.

The project of "The Interactive School for Children" was thought of as an interactive platform for children, encouraging their thinking and creativity based on the individual capabilities of each child. The mission of the school is to develop open-minded students who through fun and exploration learn the importance of living in a conscious dialogue with architecture and their surroundings. While nurturing the joy of childhood and stimulating all the senses to fully perceive architecture, city and other man, children prepare to live in the modern world. The educational program supports young people to become independent and courageous so they can face the demands of the environment.

Understanding children's nature, getting to know what the world looks like from the "perspective of one-meter height" by studying specialized literature to learn about the way children perceive the world is going to be basic for the process of designing spaces for children. Architects and designers' knowledge of things which capture children's attention, the symbolism of colors and the way they influence mood and state of mind help to organize space. Studies of the methodology of the developing field of architectural education for children, types of activities facilities which employ it helped me to define the program for "The Interactive School for Children." Working with children during the architecture workshops in the international kindergarten "Tickles", placed in St. Joao de Brito Street in Porto, gave me an idea of the way children examine the world and organize their space.

The project is divided into three parts. The first is a theoretic part presenting the way in which children perceive space in childhood. I was trying to find out how they organize their world and read architecture and surroundings. The second part presents the idea of architectural education for children, with the example of the school pioneering in it, and the necessity of this sort of education for the full development of a person in Europe. In this part I am looking for "design patterns" in spaces for youth to introduce in the last part in description of the project "The Interactive School for Children".

1. State of Art

1.1 Perception of architecture and space in youth

Different ways of perception a space by children

To understand the way a child perceive space and organize themselves in static environment we need to understand the meaning of space in a child's perception of the world and the role of senses in a full process of cognition. First, I will explain the meaning of space to move on to the meaning of perception during childhood.

Edward T. Hall, an American behaviorist, explains in his book The Hidden Dimension the characteristics of space. He specifies the importance of "territoriality" and says that *"the attachement that the individuals feel to a typical territory makes them defend it against the representatives of their own genre".*[1] As a result man creates various zones, places, districts, gives them names, particular functions and meaning. When the area is shaped and defined the entity seeks "his own" place, sub-spaces, limiting them in size by divisions. Already defined place is perceived as an "interior" in contradiction to being outside in the "surroundings. It is said that *"(...) the place had the centralized shape and form and additionally, was determined by closure and opening.*[2] These characteristics define the core of the place and the meaning of space in general.

While exploring space we perceive it using the code of communication which, as Aristotle acknowledged, is defined by the horizontal and vertical coordinations such as: *„above"* and *„below"*, *„in front"* and *„behind"*, *„right"* and *„left"* which help us to find out in space.

Acknowledging this and and taking into account the use of graphic symbols and signs, children can easily define themselves in the specific regions and name individual activities in there. Piaget argued that *"the object is a system of perceptible images, preserving a fixed spatial form in the next upcomming (..)".*[2] He stresses the value of organizing the world in childhood. Analyses show, that a young person builds their world through experiments and similarities. Already known and explored objects connect at a specific location and place. The child's world is centralized in terms of subjective perception; Piaget says: *"This*

[1] E.T. Hall, "Ukryty wymiar" (ang. Hidden dimension), Warsaw, 2000, p. 17

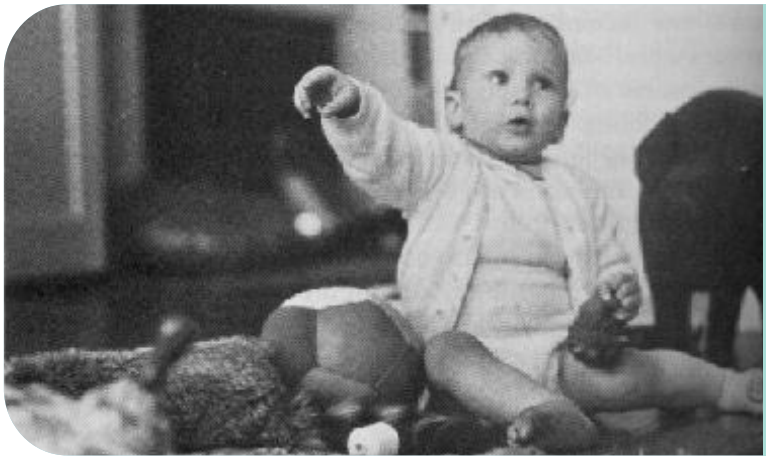
[2] Ch. Norberg – Schultz, Bycie, przestrzen i architektura, (ang. Existence, space and architecture), Warsaw, 2000, p. 21

[3] idem

means that the existential space of the child consists of a number of solid elements and is constantly developing."

All the interactions that the child participates in, are oriented in a topological way. Each action has its own reference point and is described by the epithets such as: *„proximity, separation, sequence, limit, inside-outside and continuity".*[4] In this case we should generalize psychology studies about perception and accept, as Schulz, that the way children organize the space is based on determining the centers (places), directions, means, roads (continuity) and the regions or zones (restriction).

1. child during the play



Defining that fundamental relationship lets them move freely in the space that surrounds them. Edward T. Hall went further and identified three types of space: a permanent, a half permanent and an informal one. The American behaviorist assigned to permanent space elements like divisions, patterns, buildings - architecture. He related them strongly to cultural regulations and aspects. The permanent space is thus considered having the most influence on human behavior, personality, and psyche. Further on, Hall distinguishes half-permanent space. It consists of the objects in our closest environment, the ones that can change their place, shape or their coating, like furniture. The way we arrange our interiors reflects on the person living in there. Also the colors we select help us feel comfortable. All this speaks about our personal relationship with space. The last type of space specified by Hall is informal space. It is known as non-material and is related to the spatial perception. He writes about distances: intimate, private, social and public and emphasizes their importance for children as well as grownups.

[4] idem

Taking the above into consideration, we can affirm that "importance of space and place" play an extremely important role in a child's existence. Every living creature is perceiving it through senses, some senses being stronger than the other. In mammal, a child in the womb starts to perceive the space and to communicate with the outside world. The unborn baby receives impulses from the external environment as changes in temperature, vibrations or touches of their parents. It is intuitively seeking for a suitable place to lie. The small creature hears the mother's heartbeat (and other sounds produced by the mother's body) and feels her emotions. We can find a lot of similarities between the way we experience architecture and the babies' way of perceiving the special surroundings in the womb. This is a natural ability which we acquire already during our first months of unborn life. During everyday activities a little child unconsciously notices architectural elements such as vertical lines and horizontal planes which are trees or the surfaces they walk on.For example, a sea shell found on the beach can be a big fascination for a child. It picks it up and examines the shell with all the senses, perceiving its shape, smell and colors. Children examine nature with natural instincts and curiosity. This is the first contact with an object that a young person makes. Through this examination the child learns and receives information about the meaning of an object.

Through a playful manner of experiencing materials like plasticine children unconsciously learn about the material's propertie (while they also learn to create shapes). For instance, if a child experiences pain once by touching an object with improper characteristics (hot, rough, pointy, sharp...) it will automatically remember this experience and avoid such a contact in the future. Through roleplays children dive into fantasy worlds, learn about social contacts and the accompanying emotions, such as stress or power. In the fantasy worlds, based on real surroundings but decorated with the help of imagination, they experience space in a very special way. Evidence exists that during such games children experience architecture and its surfaces from which they learn and draw conclusions. They learn about diverse materials' proprieties, about the proper use of colors and colors' symbolic meaning and about the role of natural and artificial light in their life. This is a natural way of spacial perception and of learning about the architecture that continuously surrounds children.

The way children perceive the world and space is also connected to the cultural background of a child, to his knowledge and mindset. While growing up, children observe more, analyze the world and architecture that surrounds them more deeply and make conclusions. While traveling with their parents, tasting new, different flavors, speaking with foreigners, children unknowingly create their personality, searching for their place and space in life. Through observations and an individual contact with architecture children learn about the history of the place and come in contact with its tradition. They learn about how people lived, worked and behaved. They also get to know how history and expansionism changed architectural styles, what where the tendencies in the building industry in the past and what architectural details characterize them. They may also observe which materials and colors were the most popular in a different region of the world.

Thanks to traveling, observing, listening to stories, being open and willing to learn history, children develop their intellect and enrich their personality. It also helps children to define

their inclination for professions they will follow in the future. That is why understanding and experiencing space is crucial. It is vital that schools or educational centers teach children the significance of studying history and architecture and introduce children to the dialogue with architecture and the surroundings, which is both advantageous and fun.

The first way in which a child examines space on daily basis is through visual impressions. Sight with its impactful photographic memory is responsible for this kind of perception. The second are sound waves that create space, indicate the localization and build the character and mood of the space. The sense of smell determines the place's character even stronger. It facilitates space orientation stimulating the receptors to find location. Not as prominent as other senses, according to scientific studies smell is the sense whose input stays in our memory for the longest time. Recalling the smells of childhood is very common. We all remember grandma's freshly backed biscuits. Although the smell is not three-dimensional, it can tell us much about a place, people and their customs. There are also direct receptors responsible for the sense of touch which are essential for blind people's perception of the world. For example, the temperature of a place helps them in spacial orientation so touch-sensitivity is closely related to visual perception. No matter how old we are, whether we are only learning to walk or we have much experience behind us, senses influence everybody. Their input stimulates us positively or negatively, makes as calm or aggressive. Young children who are shaping their personality are very susceptible to this impact: they respond immediately, reacting to the transmitted impulses. They easily get in the mood of the space that surrounds them, whether created by a strong color, light in the interior or influenced be the scale and harshness of a building. During the period of childhood architecture influences children through their senses. Adults need to take that relation into account, especially in the educational centers, in order to support children with conditions that will stimulate all their senses and will be most suitable for their intellectual and personal development.

Taking this into consideration, we can assume that the importance of space and place play an extremely important role in a child's existence. Specific climate, mood and atmosphere that permeates the given space influences children. A dialogue between immateriality and materiality, alive and solid, soul and emptiness takes place. Unknowingly, children creates an internal geometric grid of different connections, which influences them and creates strong emotions. Children experience the world, other humans and architecture through their senses.

Without a doubt senses help children understand and perceive the world they live in. Like a good teacher, they provide information about the world, architecture, and people in a very accessible and natural way; they transmit warnings, predict danger, signal activities, help memorize and code information in a photographic way so it remains in the mind for longer. When all the information received through senses comes together, children fully perceive the environment and architecture. Senses trigger the imagination of the youngest, being often the source of unforgettable experiences. Therefore, spaces for children should educate through architecture. For instance, they might expose the interior's constructive elements that both are functional and reveal information about the building's past or its designer.

1.2. The importance of organizing the space in childhood via architecture. Architectural education

We live in an international community where different cultures, customs and tendencies are permanently crossing and reflecting on each other. The technology progress in medicine, computer studies, materials and constructions majorly improves our life. Living, studying and working in the cities of Europe or of the world is not difficult anymore. Children are often changing their place of education, losing their cultural identity. It is getting hard for them to select the most important information from all this that the world serves them. In this case architectural education programs help children find themselves in the internationalized world and learn how to communicate in it.

Inculcating the pro-sociological values of "learning life in space" [5] mentioned above into the brain of young people is extremely important and might bring benefits in the future. It is because young people are great observers who learn fast and reach conclusions quickly. Secondly, they are open to actions that can certainly result in global profits in the future. As a result, there is a chance for young people to become global citizens, for whom logistic and economic management of cities and their surrounding areas becomes a natural factor of shaping a better living. Of course, a process of educating young society in architecture takes time and depends on many factors. Step by step, the educational system in Europe is using children and adults' sensitivity in the architectural and environmental planning process. Consciousness of that importance is gradually implemented into the structure of education, cultural institutions or offices. The most important role in educating youth is to share the responsibility for the broader environment. At that point parents and teachers are the ones who should hold the responsibility and together with the local community should provide the live action in public space. One of the Polish architects deeply engaged into the process of building an architectural education program in Poland, Dariusz Smiechowski, reflects on that subject. He says that (...) *the education of planning will enhance awareness about the environmental and cultural heritage*. That knowledge should be transferred from the specialists being directly involved into the project, like architects, landscape architects, architecture students, firefighters, to young people's minds. *We should encourage young people to co-responsibility for the environment that is connected with the practical need for democratization of life, the mobilization of social forces – among other things to participate in a wise management of space.*[6] Collaboration with children and youth in primary school can bring prospective benefits through involvement of minds of young observers and their ability to learn.

[5] the expression created by polish architect D.Smiechowski

[6] Z. Bisiak, D. Smiechowski, A. Wróbel, Dialogue with the environment - architectural education. Regional education - cultural heritage in the region, Warsaw, 2005, p. 7

Schools and educational institutions seem the best places to build that relation because they might be the only possible place where children familiarize themselves with architecture. We should use the opportunity that time of childhood and young organism provide for "a conscious meeting with architecture," like Smiechowski says. Schools and after-school classes may be the only opportunity for children to get to know what architecture really is and to learn how to organize and protect the environment now and in the future. Parents play an important role in the process of shaping the young person's maturity. They should gradually introduce their child into social relations, and make them aware of political and interpersonal skills. They cannot forget about conversation: exchanging ideas, concerns, talking about the past, history, and progress have a big influence on the personality and sensibility of a young person and affect the way a child thinks. Child's actions become more logical and fuelled by curiosity and desire for new solutions. It is also up to teachers, schools and educational institutions to teach children the responsibility for the decisions they make, for the environment, a sense of cultural community. Benefits of such training will affect not only young people but also parents and their closest surroundings. Teaching children of how to behave in relation with architecture, how to properly manage space and time can improve their life and influence the quality of architecture in the future.

Fortunately, there are several institutions in the world that provide architectural education. They exist in the Netherlands, Belgium, Scotland, and Japan. The main one is located in Finland with the center called PLAYCE – an organization formed in 2003 in cooperation with the academy and Alvar Aalto museum. That northern European country has introduced architectural education as a law in 1993. Tuuli Mitola-Meskenen, co-writer of the program and the director of the Finnish Arkki, created an architectural school for children and adolescents. The facility teaches to understand and discover methods of architecture, to understand what public space is and why it is important to take responsibility for its condition. Students of this school took part in designing the interior of a new headquarters of the organization "Save the Children" as well as in designing a new district in Helsinki. Headword for the Arkki School says that, *(...) the child is a born architect. He/she builds his own shelter, tree-houses and castles in the sand.*

It is convincing that the experiences that children acquire during their childhood will play a big role in their later lives. Let us show them the way to seeing deeper, perceiving the world that surrounds them better, noticing cultural differences in architecture and viewing them as valuable. Let us develop in young people a sense of responsibility for the country they live in, for their homes, and respect for their cultural heritage. Let us promote fascination with other cultures of Europe and of the world. In that way we will not only take care of the development of children but also of a better condition of architecture and urban planning in the future.

I would like to present an example of the Architecture School for Children and Youth which is the first school in Finland that introduced and developed architectural and environmental education for children as an after-school activity.Arkki offers a variety of architectural courses to young people and writes educational programs for schools, after-school centers and museums.

The organization educates more than 350 children between ages 4 and 19 who "participate weekly in architectural courses on a long-term basis". The organization is deeply involved in national and international networks focused on architecture and environmental education. They teach students and coach teachers and daycare personnel.

"The aim of the Arkki foundation is to promote architectural education in Finland in order to help children fully discover and enjoy the constructed environment and architecture, to help them understand the impact and meaning of architecture to man and to help them understand everybody´s joint responsibility for the environment. Young people learn to observe the environment and analyze it critically. Their personal relationship to the built environment develops simultaneously with their skills of participation."

2. Architectural workshop with children

Children learn how to arrange and plan their work, time and, above all, they learn techniques of productive thinking.[8] Children learn material's proprieties and bases of construction while building huts in an atmosphere of play and fun. The courses concentrate on ways of analyzing and understanding a problem and searching for solutions. Through manual

[8] http://www.arkki.nu/index.php?page=main

exercises children develop three-dimensional thinking and spacial perception. Children build models, working in scale 1:1, trying to explore space – searching, on their own, for the best solutions. *They explore architecture, the human scale and the role of the body in experiencing the physical world(..) The interplay of imagination and intelligence, and theory and experimentation are encouraged in project work. Learning occurs through play and carefully planned project work. Play is the means by which children explore the world and learn naturally. A playful approach enables children to use their inborn imagination and to utilize their natural spontaneity. This contributes to the development of creativity and spatial thought processes.* Experiencing success is a crucial element in learning. Succeeding encourages one to explore the subject further.[8]

3. Architectural workshop with children

Through various activities the Arkki Institute tries to encourage the young to active participation in the environment and to make it a habit. The Arkki, School of Architecture for Children in Finland is an example for other institutions of how to teach children Architectural Education and how succeeding one to explore the subject further encourages.

4. logo of the Arkki School for Children in Finland

[9] idem

2. Architecture as an element of education

2.1. The role of architects and planners in shaping an inspiring the ambient of schools and educational centers

It is said that schools and educational institutions should provide pupils with necessary conditions for their development, prepare them for a family life, teach responsibilities towards the surroundings and other people. Therefore, the role of architecture should be to create proper conditions for schools and educational centers to realize these goals. The building itself should be a safe space that will stimulate interpersonal development, propagate ideas of sustainability by used materials and, above all, be a platform for intellectual development. The architectural education program of schools should be reflected in a school space itself, resulting from cooperation between architects and planners. It would be perfect if in the process of shaping school space could be involved architects and teachers, as well as children and parents to thoroughly verify the needs and requirements of the school. It should be generally accepted that supporting young people with sports, music, language, theater activities in the space properly designed for those is an investment in our common future. Like Smiechowski says conscious citizen is a treasure.

Nowadays a model of family is more liberal; parents often change the place of living, emigrating from one country to another or within the borders of one land. International schools and centers should help children learn their past, the history of their nation, while developing the knowledge about languages, science and arts. The role of a teacher is extremely important: besides teaching and transferring knowledge, they have to develop students' thinking skills, the ability to associate a cause with result, help make their own decisions and shape their aesthetic taste. Moreover, their interpersonal communication among children has a big influence on children's further relations with each other and their ability to work in a group, for example with foreigners.

The surroundings of the school often is designed or re-designed in partnership with architects, teachers, children and psychologists, while institutions like universities, international workshops or public institutions are involved in work on the school's structure and program. This is a modern, open method of design represented by Ivan Illich and Tomas Capanell. The projects, according to them, should by both conceptual and functional,

where each element is equally important and proportional to the other. Following that rule, the educational spaces respond to the needs of their future users in hope that in a few decades the aesthetic value will not decline.

The authors of the *"The Language of School: Design Patterns for 21st Century"* present very interesting opinions: they claim that the main problem in the architecture of schools and educational centers is the lack of a common design vocabulary between school stakeholders in the process of design. We shall interpret this as a lack of an architectural language and codes that investors, architects, parents and children may use in order to transmit their ideas. In response the authors created twenty-five patterns that define "the graphic language for the design of healthy and functional learning environments". The method is mainly based on "four major and simultaneous realms of human experience — spatial, psychological, physiological and behavioral" and is characterized by its "attributes".[10]

The writers explain the realms of children experience and relevant attributes as an importance in the School Planning and Design

spatial	intimate, open, bright, closed, quite, related with nature, monumental, technological
psychological	safe, calming, playful, inspiring, stimulating, encouraging, creative, raising the sense of community
physiological	warm, cozy, visually interesting, texture, healthy, aromatic
behavioral	individual work, collaborative and team study, research, physical activity, reading, writing, drawing, work with computer, designing, performing, dancing, contact with nature, playing, relax

[10] P. Nair, R. Fielding, The language of school: Design Patterns for 21st Century Schools, DesignShare.com, 2005, p. 7

The combination above presents the way we experience our environment whether it is a school or home space. Christopher Alexander, a professor of Architecture at the University of California, says *there are certain recognizable "patterns" that define healthy special relationship both at micro and macro level*.[11] The Pattern Language Method helps architects and planners design educational spaces that will move imagination and will be favorable for learning and establishing relations.

Physiological and spatial aspect of a space and interior inspires children to creative and joyful work and activates behavioral sphere. Immersion in a peaceful and open-minded atmosphere is responsible for the psychological realm of a child. The more space is "elastic", adaptable for different groups of children or activities, the more functional it is.

To help school planners and designers *The Language of School: Design Patterns for 21st Century* listed twenty-five principles to help designers and architects in school organization. Those principal patterns are:

1. Classrooms, learning studios, advisories and small learning, communities
2. Welcoming entry
3. Student display space
4. Home base and individual, storage
5. Science labs, arts labs and life, skills areas
6. Art, music and performance
7. Physical fitness
8. Casual Eating Areas
9. Transparency
10. Interior and exterior vistas
11. Dispersed technology
12. Indoor – outdoor connection

[11] op. cit., p. 8

13. Soft Seating
14. Flexible spaces
15. Campfire space
16. Watering hole space
17. Cave space
18. Design for multiple intelligences
19. Day lighting
20. Natural ventilation
21. Full spectrum lighting
22. Sustainable elements and school as 3D textbook
23. Local signature
24. Connected to the community
25. Bringing it all together[12]

Above "healthy patterns" are trying to build interconnection with the four realms of human experience to help in the process of designing educational space for children. Each presented principle results in highly adequate and well-planned space for youth development.

The writers stress the importance of organizing a classroom space opposed to the traditional definition of a classroom,. They warn against enclosed, monotonous spaces of daily meetings, where peers are obliged to sit and move in the same way or read the same books and play in a limited area. Old style of architectural planning organizes classes along a corridor to have a better control of the students during their break. In that configuration pupils do not have an opportunity for the development of their individuality and for expression while being under observation. The authors do not recommends the model called "finger plan" that gathers smaller groups of classes far away from the main corridor but see the positive aspect of this arrangement which is "space circulation" in the interior

[12] idem, p. 11

of the school. In this situation, the classes which are remote from each other, in different wings, have their own identity expressed with different color, graphic texture or light. The analysis shows that vast majority of school buildings are “cells-and-bells models”, which architects should modify in order to create a better atmosphere for learning, having fun and making new friendships.

To sum up, architecture communicates how children can and cannot behave in the given space. It transmits the information through forms, layouts, color and the proper scale for children. The awareness of a well-designed learning space is a very important part of the educational process. The places in where children learn, rest, play, build new relationships have significant impact on their well-being, taste and aesthetic sensitivity. The proper use of colors, the intensity of natural and artificial light in the classrooms, suitable desk orientation may influence the interpersonal skills of the pupils, their ability to work in groups and the level of their concentration. The simple treatments can significantly improve our living space and help children in better learning.

5. Palais des Congres, arch.Saia Barbarese Topouzanov Architects, Montreal

2.2. The role of color and light in the schools and education institutions

Color has an important influence on children's state of mind; it creates scenery for their daily affairs; affect their feelings, the level of concentration and health. Studies of color in architecture have shown that the right color stimulates children to work, strengthens their concentration and the efficiency of studying. Therefore, chromatography is widely used in interior architecture as therapy and to benefit the organism.

Goethe was already writing about the characteristics of colors and their effects on humans in his time. *In The Psychology of Color*, Eva Heller states that the sensations or reactions created by color are a universal rather than personal experience, and are linked to cultural, anthropological and even biological factors – given that colors develop sign value and this information is passed on through generations over time. Colors induce automatic and unconscious reaction and associations, for example, references to nature, such as green evokes forest or sea.[13] In many cultures we notice the power of color as used in hierarchy or symbolically associated with the concrete celebration, spiritual state of mind or season.

It is widely accepted that colors from the warm family like "red, orange, yellow are seen as stimulating and jovial where cold blues and greens are deemed relaxing and serene".[14] In many cultures we notice the power of color as used in hierarchy or symbolically associated with the concrete celebration, spiritual state of mind or season.

It is widely accepted that colors from the warm family like "red, orange, yellow are seen as stimulating and jovial where cold blues and greens are deemed relaxing and serene". Red as a symbol of fire, passion and war stimulates to action, movement, while yellow,

[13] Mireia Verges, Light in Architecture, Tectlum Pulishers, 2007, p.154

[14] idem

as a symbol of sun, evokes happiness and vitality. Orange, as a mixture of two previously mentioned colors, also follows their proprieties but to a lesser degree. Green color refers to nature, symbolizing vitality, life and freshness whereas blue is linked to the sea and sky, evoking tranquility. Violet is thought as a color of spirituality and mystery, often acknowledged as feminine.

Considering the meaning and symbolism of color, we cannot forget about black, white and gray, as they have a deeper meaning. Western culture ascribes innocence to white and bereavement and death to black color. Gray, as a combination of both, is associated with formality, neutrality and distance. The use of color in interior and architecture either has contextual justification in reference to the local materials and location or to the character of the building (public or private spaces, offices, educational and sport centers, sacred, etc.). The general reception of color depends on "the harmony and combination of secondary colors that surround the color that is selected as a base".[15] The code or configuration of colors, their intensity, subtlety or "transparency" will make a special impression on their addressees. For example, the combination of yellow, white and pink brings the feeling of innocence while relation between red and black evokes sensuality, sense of power and superiority. In interior and space design we also consider the saturation of a color as, depending on its intensity, the same color may have opposed psychological and aesthetic consequences.

[15] idem, p. 155

6. Educational Center El Chaparral designed by Alejandro Muñoz Mirand

7. Educational Center El Chaparral designed by Alejandro Muñoz Mirand

In the interior and space design we need to take into consideration a couple of facts that shape the final ambient. The interior of space is not only shaped by form, the function of areas and used colors but is determined by light, its warmness, the room's orientation towards the sun, the tonality combined with the texture of the used materials. And so, warm colors should be used for north-directed rooms because they will create a comfortable and cheerful interior. For interiors that are strongly exposed to the sun it is recommended to design one dark accent, for example the floor, to absorb the excess of light and to reduce reflection. The color accent in space may enrich it, give a character to the interior and, with the use of graphic, decors or patterns, make it unique. The influence of a color on a child's psyche is extremely important. Those spaces where children spend most of their day time, like schools, sports and educational centers, hospitals, their rooms, need to be carefully designed with a precise choice of colors and of their saturation. Colors affect our everyday lives, even when we do not notice it..

Each year we are facing new trends in color choices both for interior and exterior architecture. I think that the best way is to define the character of the space that we are designing and test the influence of colors on our behavior. With such a big diversity of products on the market it is possible to create, like in a theater, any scenery that we want and to stimulate the behavior of the space's inhabitants and guests. Paint companies, increasing in numbers, give designers a great tool for expressing their imagination and creativity. Supplied with the advanced light and colored light technology, architects, and designers have the ability to alter people's moods and visually change the character of the building according to the desired effect.

When speaking about color in architecture we cannot forget about the relation between color and illumination and about its influence on architecture and man. This relation happens across "interaction between light radiation, the object's surfaces, the human eye and the perceptive capability of the observer".[16] Light influence on the way we perceive architecture helps to orientate in space, transfers information about shape, texture, dimensions, color. It creates an ambient and scenery, calms down or introduces dramatic atmosphere inside or outside. It determines productive work, if chosen correctly, or fails to help us concentrate. It may make us feel healthier but also depressed. Undoubtedly, attention to the proper choice of light, its intensity, warmness, localization, contrast is very important in every space people inhabit.

[16] Mireia Verges, Light in Architecture, Tectlum Pulishers, 2007, p.340

8. School Bressol Els Colors de Manlleu designed by RCR Arquitectes

9. / 10. / 11. School Bressol Els Colors de Manlleu designed by RCR Arquitectes

I would like to present the project of the School Bressol Els Colors de Manlleu in Spain, where architectural concept was expressed with color and light. The architects from RCR divided space and its functions with colored moduls- elements. "These chromatic variations and also the incorporation of the perspective of children and their capacity to grasp exterior world were the guidelines in the design of this kinder-
garden in Manlleu, Barcelona."[17] The object is based on an orthogonal grid made of eight rectangular "prisms distributed in two bands that house the shared spaces in their first volumes and classrooms in the consecutive ones, all crossed by a ninth elongated piece that lies transverse to both rows and links them as a sort of porch." [18] The architecture is like a game as each piece has a different color, underlining its function. The object is divided into two spaces: ground floor is for children while first floor for the staff and management.

[17] Color and light in architecture., op.cit., p.346

[18] idem

2.3 Realizations of the children participation with architects and tutors in a process of creating the educational spaces

In the process of design the creators, very often, face tasks from the areas they have never faced before. Some of them try, like actors, changing the roles and becoming, for a while, their client, the target they are designing for. They familiarize themselves with what their client likes, where he or she works, what car s/he rides, what s/he reads, eats, etc. They talk much with their client and draw conclusions. In case of designing educational space or object for children, it seems at first that everybody knows perfectly what it is like to be a child because we have already gone through that period. Some of us even say that they "have a little boy or girl inside" so they can easily understand children's needs. This, however, is not enough. We, in fact, need to get an opinion from the experts: ask young people, who are still observing the world from the height of one meter, for their observations and complaints concerning the school, its closest surroundings, the kindergarten or the whole city. Only then can we look for the best solution. Cooperation between children, tutors, supervisors, architects and designers is fundamental.

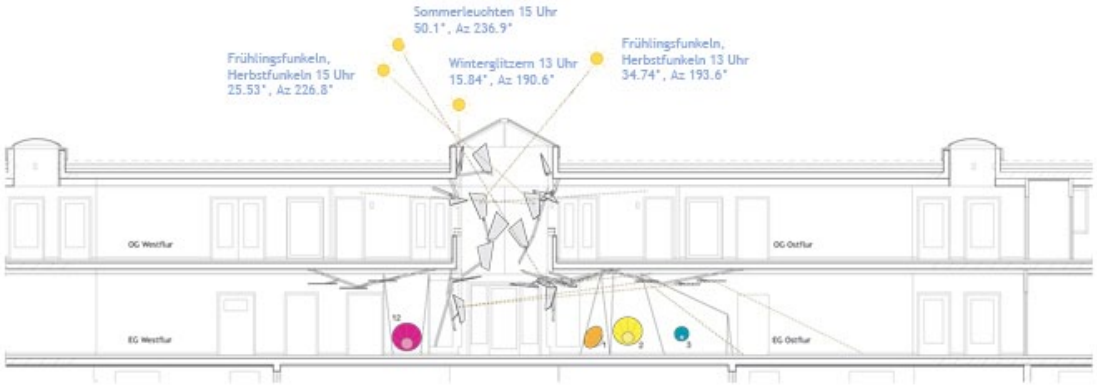
Unfortunately, modern cities are not adequately prepared for their youngest residents. Places for children's activities, like playgrounds that are stimulating creative thinking and the process of socialization, are extremely needed. When the request gets defined, all we need to do is to invite children into collaboration with adults and start employing their imagination, hearing their passion, "reading between the lines" in order to design space that responds to a child's concept but is still usable, functional and sustainable. Such a co-operation in design needs to be well-organized, prefaced with interesting projects and backed with funds. Moreover, adults need to let children express themselves because it is them who know best the area of school and its reality. Out of children's perception and limitless imagination an architect can create an educational space that will allow children

to identify with the school space. In this case youth gain abilities to cooperate in a group, observe how adults work on a project and make decisions but, above all, children gain the satisfaction of a well-executed task.

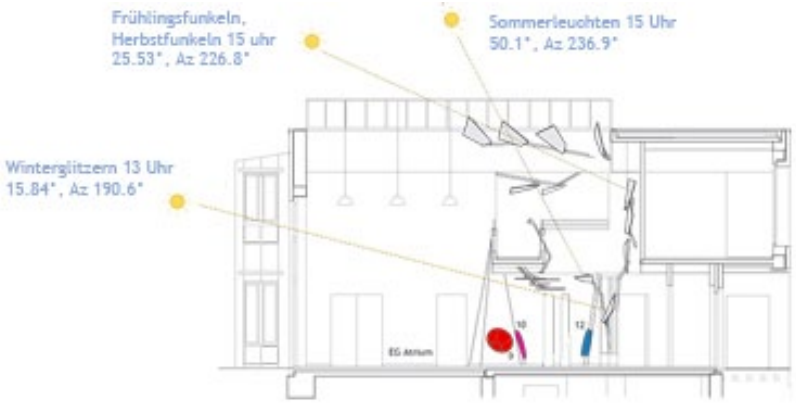
To illustrate this, I would like to recall the project of the German group Baupiloten that takes into account children's observations and includes this information in the design of educational facilities. Children help the architects during the conceptual phase in the project of the revitalization of an old building into a multinational Traumbaum kindergarten and primary school. *"Following the take-over by the institution of the Arbeiter-Samariter--Bund* the day-care centre received its new name and a new inhabitant: the Tree of Dreams. The Tree of Dreams quickly settled down with the children and is now their companion and playmate. His Trunk World sprawls along the ground floor. It is impressive and massive. The trunk encloses you from all sides and gives you the feeling of security. The Dream Blossoms grow out of the trunk and the children can snuggle themselves into them. Above the blossoms grows the Leaves' World. The mirrored silver leaves magically reflect rays of sunlight into the darker Trunk World.[19]

Participation in the design process with children inspired the group of architects to create "tangible architecture" that will respond to and move children's senses. To verify the proportions and the scale they created prototypes in scale 1:1 and tested their ergonomic value. As a result, long dark halls and the atrium were turned into stimulating, interactive space. Out of children's drawings the Baupiloten group designed the interior, using sound and lighting effects. Conceptual stage ended with the creation of a 1:1 scale mock-up jointly designed and then tested.

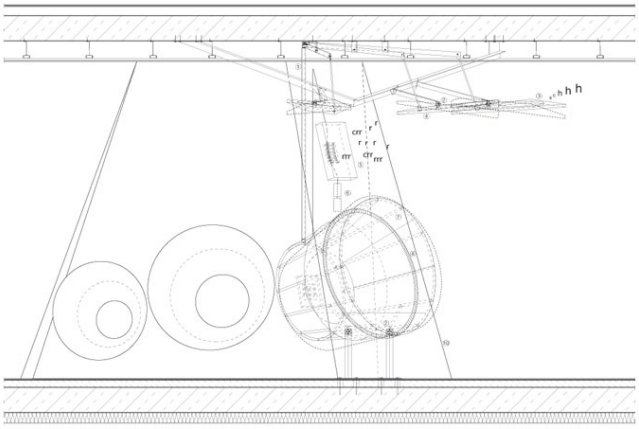
[19] http://www.baupiloten.com/en/projekte/kita/Main_kita.htm



12. longitudinal section



13. cross section



14. sound niches

15. day-care centre: before tarnsforamtion

16. Traumbaum kindergarten designed by Baupiloten

Here are some key words that perfectly describe the attitude and uniqueness of the projected space:

sensations, sound, music, texture, fairy-tale atmosphere, community, internationalism, children imagination, playing in small and bigger groups, sparkles and glow, natural light and the spectacle of artificial illumination, mystic and dreaming stenography of the interior, interaction among all moved senses..

17. first floor in summer...

“It is so big... reaching up to the sky... reaching beyond the helicopters and the stars, so tall is the tree of dreams“

- says Hyun, 5 years old

“It should always sleep next to me
so that I can sing it a lullaby”

- Selin, 9 years old

18. ground floor...

“And when the tree of dreams is afraid,
I will build him a house made of cardboards”

- Selin, 9 year

19. sunlight leaves...

Well-designed educational space for children should let them feel free in the interior which "breathes" together with them. An example of the realization of the Baupiloten shows that designing together with children makes them more sensitive to the surrounding space and activates all the senses to fully feel architecture. Architects get to know easily the needs of their target group. Consequently, in the Traumbaum nursery a tree was placed while in the School of Erika Mann, also designed in cooperation with children – a dragon.

These images show the cooperation and dialog between the architect and the child. This project proves that it is not difficult or expensive to create space that satisfies children and enlivens urban surroundings. We should follow the example of these designers and give voice to children. Let us listen more carefully, step into their worlds, analyze them and take care of the space in which our children grow, socialize and live. Architecture permanently accompanies children in their life. It sends messages about the world, history, materials and space. Unknowingly children learn how to properly organize the space and to manage their time. It has an influence on shaping their character, style and perspectives and creates a background for the wide range of social behaviors, opens minds to other people and cultures. It also influences their mood. Raising an architecturally-educated generation seems to build a good foundation of conscious and active society that knows how to take care of its surroundings, the environment and people.

3. The project of The İnteractive School for Children

3.1. The strategy of The İnteractive School for Children

I would like to start from a brief description of the localization of the School that best describes UNESCO [20] saying that Porto "has a historical center that still preserves a strong identity forged over many centuries and clearly visible in its remarkable buildings and unique urban fabric enlivened by the great vitality of the local inhabitants."

The Largo dos Loios, where the school is localized, is in the historic center of the city surrounded with the buildings from the Roman and medieval periods. The architecture of the civil and sacral buildings of this area passes information of the history expressing "the cultural values of succeeding periods - Romanesque, Gothic, Renaissance, Baroque, neoclassical and modern (...) One of the most relevant aspects of Oporto is its scenic character, resulting from the complexity of the landform, the harmonious articulation of its roads, and the dialogue with the river. It also represents a successful interaction between the social and geographical environments." The Largo a dos Lóios is surrounded by narrow streets which the sun almost does not reach. Many houses make use of "claraboia" to introduce natural light into interiors, which is an opening in the roof that mostly lightens a staircase. Neighborhood's tall buildings' stone elevations are covered with decorative azulejos: ceramics typical of Porto which describe important events in the history of Portugal or are inspired by nature, Arabic motives or local customs. Most of the houses keep the original window frames' drawings, characteristic of this region. The railway station, localized close to the Praca da Liberdade and the Sao Bento, enables an easy access to The Interactive School for Children."

[20] The United Nations Educational, Scientific and Cultural Organization (UNESCO) seeks to encourage the identification, protection and preservation of cultural and natural heritage around the world considered to be of outstanding value to humanity. This is embodied in an international treaty called the Convention concerning the Protection of the World Cultural and Natural Heritage, adopted by UNESCO in 1972, http://whc.unesco.org/en/about/

20. map of the localization

The idea of “interactive School” was to re-adapt a building belonging to The RAR Immobiliaria for space for architectural and environmental education for children as an after-school activity. I propose an educational program for the after-school center directed at children aged three to six and for children between seven and eleven years old. The program aims to teach children how to organize space properly, how to manage their time, read messages about the world, history and materials which surround them.

21. Photo of the maquete - cross section

Architectural education in Porto is meant to help children find themselves in the globalized world, learn about sustainability and ecology and understand the meaning and messages that architecture sends to man. Children might learn productive team work, the methods of effective learning and the basic knowledge from the field of architecture and construction through observation and modeling.

The idea of interior architecture was to create a stimulating and moving background for children where they can feel comfortable, safe and encouraged to learn language and architecture. I wanted to introduce an ambient that helps establish relations and influence social behaviors. I used colors' symbolism as a code to communicate inside of the school. Knowing that colors influence a child's psyche I gave each level one color and suggested activities and classes for this level. In this way children could activate their imagination, creativity and use their senses as needed for a given task or exercise. For example, violet color as the one connected with imagination and having a soothing impact on a child, appears on the first level where children relax, play, read books. The second level that has optic chambers, is filled with blue color referring to the sky and perspective.

Generally, as a main tool to build interior scenery I used colors, light and "sound" as a means of expression. Light was introduced to show directions, strengthen color and texture, and create the choreography of space. The project associates each level with a particular color and activities. For those children who cannot read, the color symbolically helps to localize the proper classroom and activity. The colors used in the space stimulate children´s creativity, control their mood and influence the positive atmosphere in the group. The project shows the dialogue between the past and the present by respecting history but also retaining modern character. The concept from the interior where the floors are theme-colored is reflected in the elevation, visible from the street. The external part of the windows on each floor is filled with a stainless steel frame painted with the color of the appropriate level. "Windows niches" for children strengthen the "interior-exterior" dialog.

The project is concerned with the renovation of the building located in the center of Porto and transforms it into the Interactive School for children while keeping and refreshing as much of the original space as possible. The idea was to strengthen the relation between the "interior" and the "exterior." For instance, it utilizes the practically unused "window niches" creating there a "meditative space" for children. It refreshes the details that created a part of the building's history while saving them and making them significant. The role of pre-existence in the process of design is indicated and emphasized. Design respects the history of the building and carries information about it to next generations, exposing the elements and decorations from the past, showing the history of the building and its old function as a warehouse. The modified design tries to "move senses": sight, hearing, taste, touch, smell, in order to help children fully understand space and its context. Places are created where children can learn, play and experiment: an "urban garden" where children can familiarize with the sustainable and ecological way of living.

My intention was also to create educational goals and a program for the school. I aimed to focus children's attention on the surrounding space, the city in a global context;

to help them know the country they live in better, the history of its architecture and its creators. They should be given the knowledge of the traditional and regional architecture and learn to make a value of that. I want to evoke in children sensitivity to nature, to sustainability and to architecture; teach them basic knowledge of materials, techniques and construction; encourage the youngest ones' curiosity in the process of exploring the world and their persistence in getting to know the solution. Respect for history, heritage and the surroundings should become their philosophy of life. Young people should be familiarized with ecology both in the context of architecture and construction and as a lifestyle which can bring only benefits. The program of the school includes teaching about the world's most famous and important buildings and their constructors. It teaches group work and clear communication. Adults that work as architects, constructors, and leaders of pro-ecological companies would be invited for workshops explaining children what their work looks like, what they appreciate in their work, what problems they face. By oserving adults' work, for example, what an architect's day looks like, even by joining him in an office, children will be encouraged to find their passion. The school should collaborate with people from the town hall who are responsible for urban planning, with heritage constructors and ecologists to teach their principles to children. Workshops may be organized, for instance, „building a tree house" where children might become constructors. Looking for inspirations in nature and the past epochs, observing the way animals build their shelters, choosing materials will bring joy into education. During workshops children will search for explanation through manual testing, modeling and searching for explanation. Children will tell stories, read books, such as *Mr. Fox*, *Winnie the Pooh*, and later on try to build a scenery for the inhabitants of Mr Fox's family, the Hundred Acre Wood or create Wonderland for Alice.

3.2. The proposition of the structure of classes and activities

I would like to suggest architectural education activities for The Interactive School for Children. Architectural and environmental education for children would be the main activity, as well as an extra after-school activity. Moreover, the school would organize language and cultural courses to prepare children to live in a multicultural world. School's functionality might be increased through collaboration with worldwide institution, such as Finnish Arkki (School of Architecture for Children and Youth) and Lastu (School of Architecture, Environment and Culture) that pioneer in architectural education.

The principle activities in the school are the ones based on architectural workshops. The goal is to teach children to differentiate styles in architecture and to analyze the current tendencies, to get familiar with new technologies which might influence the professions which children will study in the future. They will learn about the constructions that were created by nature and by man. Further on, children may study the work of the biggest inventor

of all times, Leonardo da Vinci (machines, engine, Renaissance moving and flying machines) and take inspiration from him. Older children might be taught how to communicate in a city: not only in their own one, which they already know, but in other cities of the world, how to organize their time in a new place and to read a map quickly. Interpreting signs that surround children nowadays seems to be important as well. They will debate and describe the positive and destructive aspects in the urban tissue. Children may also try to design and build their own city: plan it according to their needs and feelings applying the knowledge acquired during workshops. They might as well face design problems such scale, proportion, ergonomy of work space, trying to construct their own chair or design a lamp.

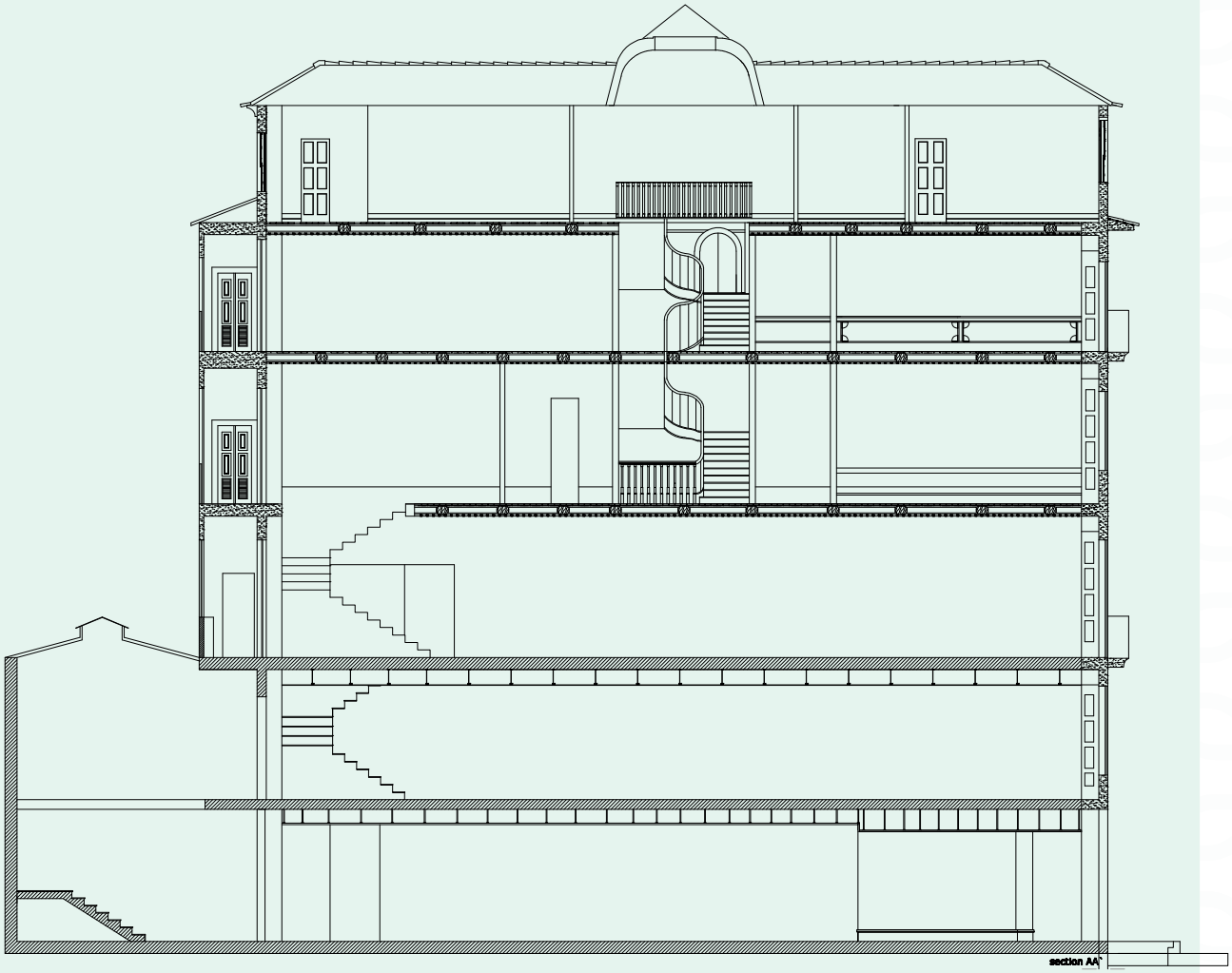
The workshops should explain what "acting locally" means and how it can improve the life standard in terms of architecture, sustainability and ecological living. They would teach to be brave in expressing and sharing one's ideas and knowledge with others like parents, grandparents, neighbors; to be socially responsible. The mission of the school is to educate a generation of open-minded, organized, eco-conscious people. The children that we are raising now will create future society. It is extremely important to work now for the common comfort of future generations.

Here are suggestions of some classes and activities that might be taught in The Interactive School for Children.

- language courses;
- architectural and design workshops;
- sustainability and ecology lectures;
- "city games" - drawing workshops;
- museum tours;
- drama, theater, yoga and music classes;
- cooking classes;
- "telling stories and listening to them";
- urban garden –in order to grow ecological and healthy, vegetables;
- kindergarten with interactive niches;
- climbing walls in order to experiment levels of perspective

22. the view from the third floor

25. property inventory of the front elevation, back elevation , section CC



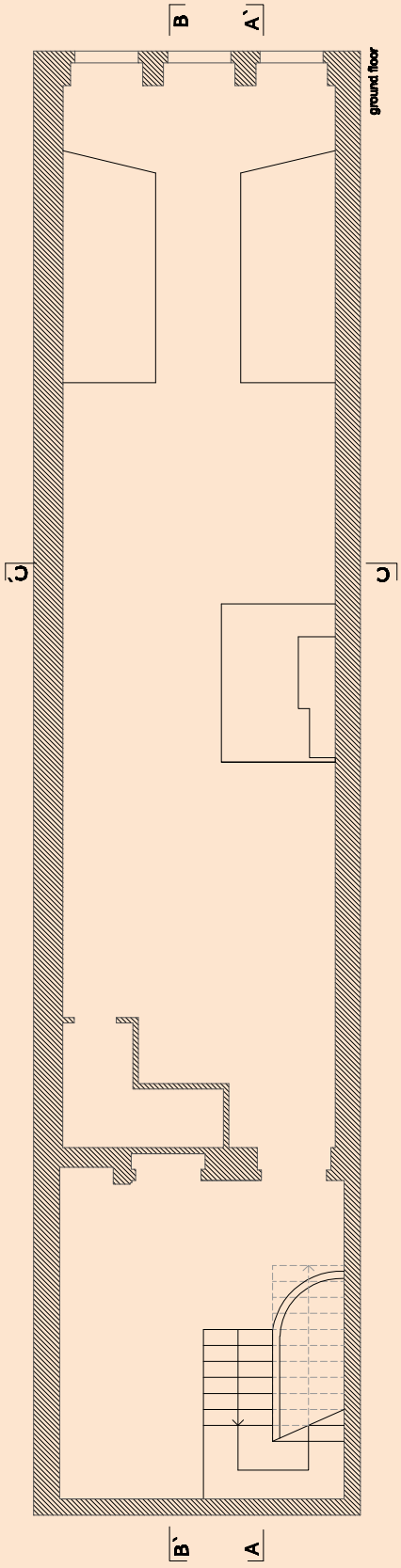
23. property inventory of the section A-A

24. photo of the front elevation

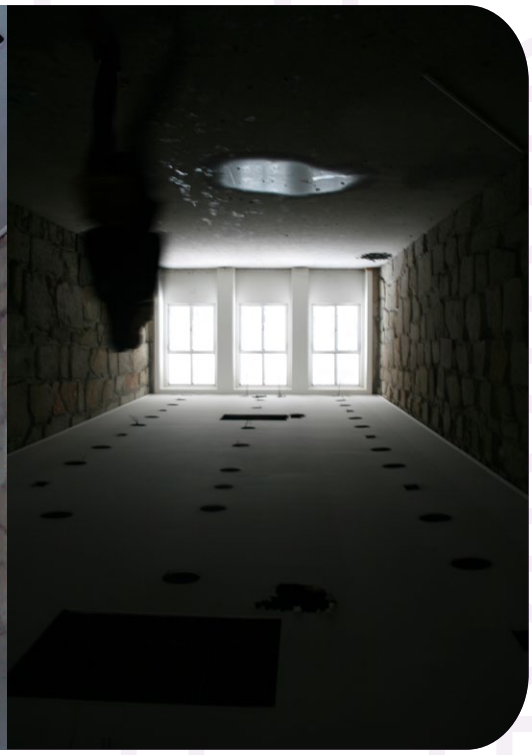
25. property inventory of the front elevation, back elevation , section CC’

26. photo references of the ground floor
27. stairs leading to the first floor

Ground floor - photo references

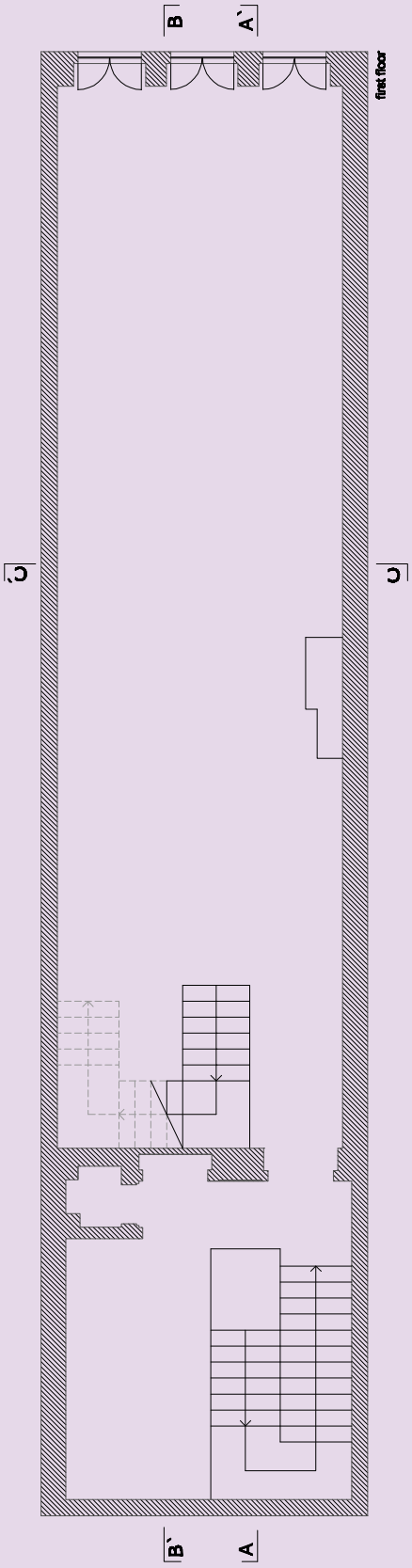


28. property inventory of ground floor



29. view on the windows of the back elevation
30. /31. view on the windows of the front elevation

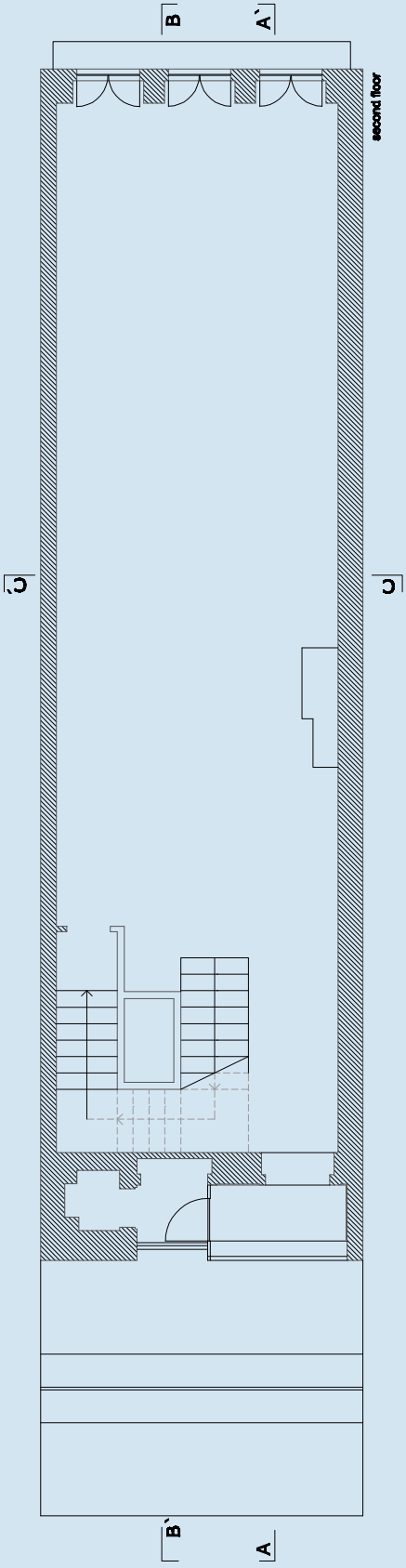
First floor - photo references



32. property inventory of first floor

33. window of the front elevation
34. original 19th century ceiling
35. windows of the back elevation

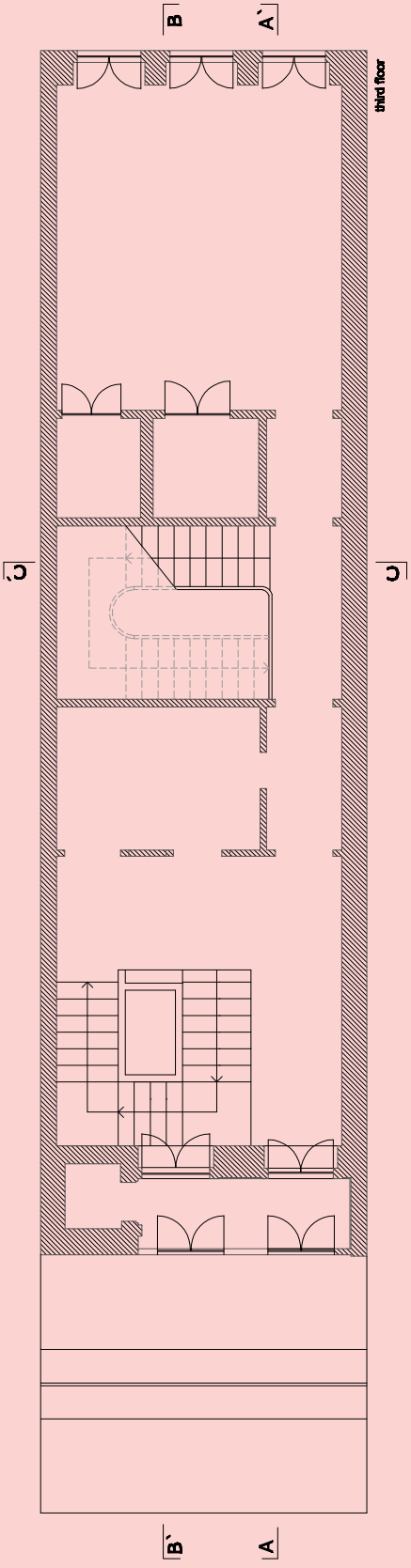
Second floor - photo references



36. property inventory of second floor

Third floor - photo references

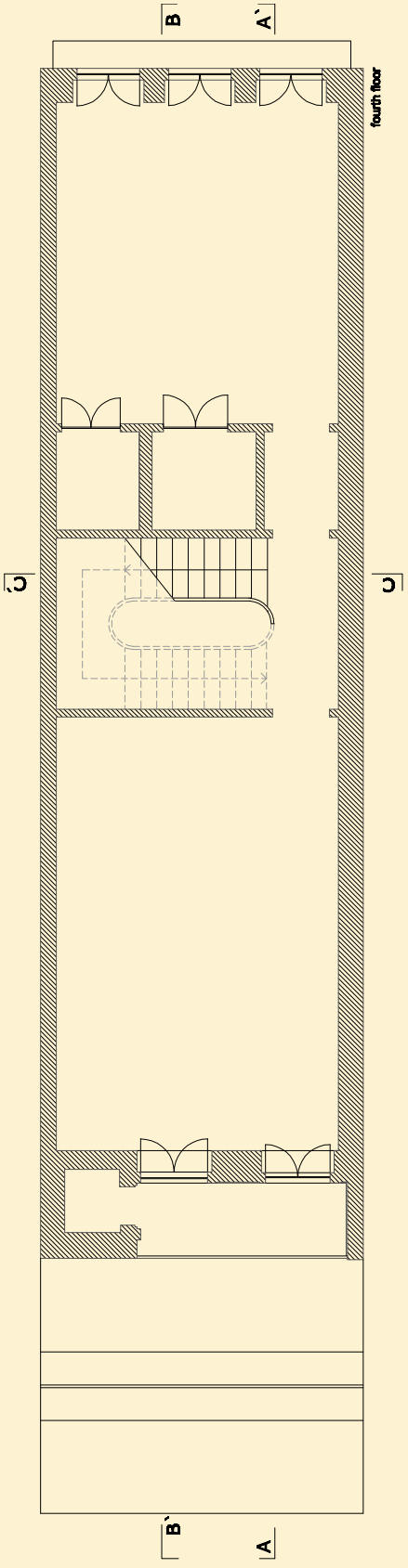
37. interior of the third floor
38. original stair-case
39. photo of cover balcony



40. property inventory of third floor

Fourth floor - photo references

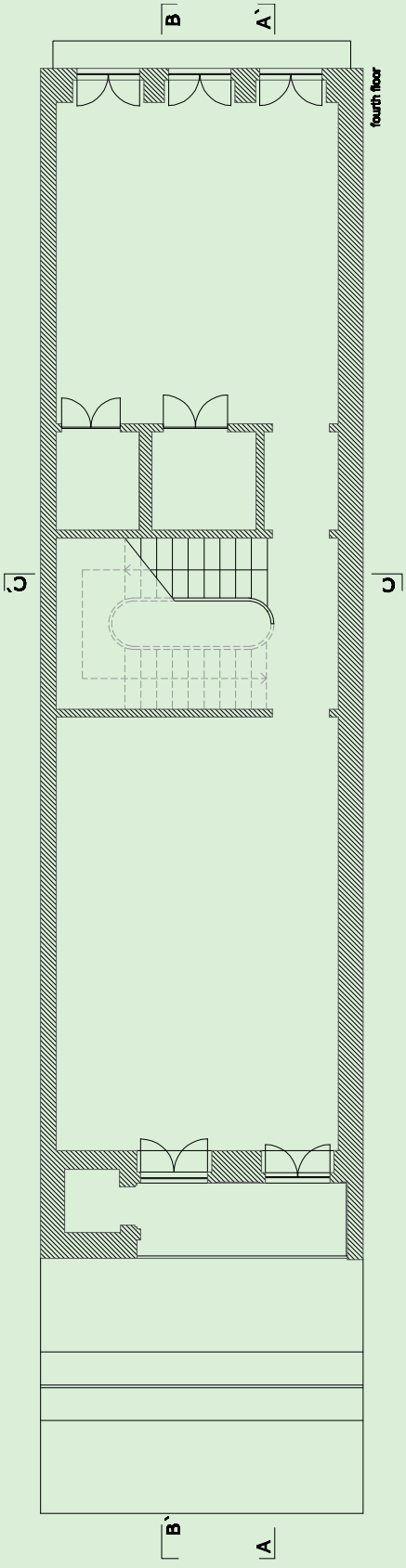
41. windows of the back elevation
42. texil storage between the floors



43. property inventory of fourth floor

44. /45. view of the stair-case of the last floor
46. roof opening called „claraboia”

Fifth floor - photo references



47. property inventory of fifth floor

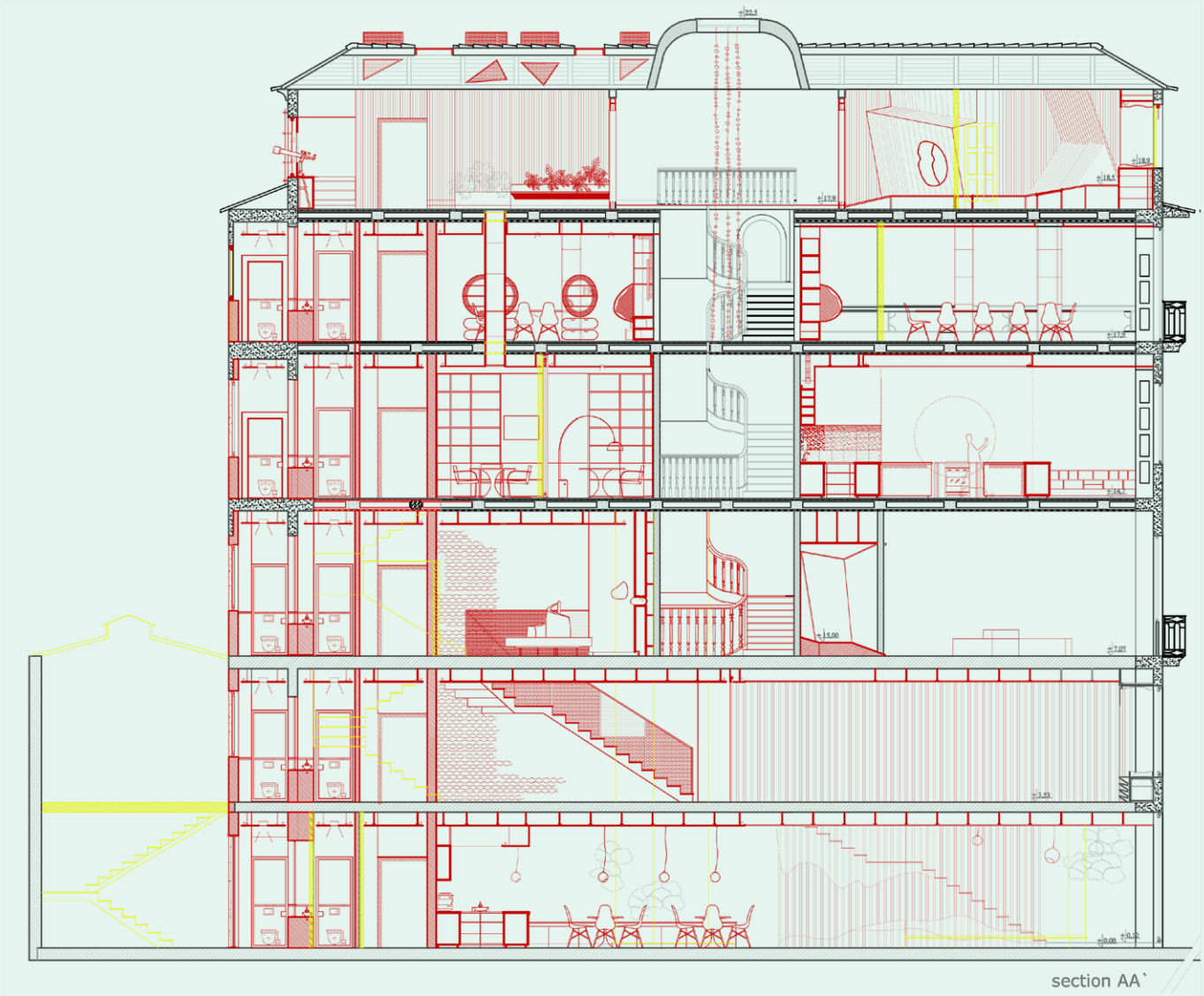
48. / 49. photos of the surroundings

3.3. İnterior and space organization

The aim of the project was to create an interactive space for children development as for the after-school activities, strengthening the “dialogue” between children and architecture. My goal was to create a space that will tell his story to its habitats- children, subtly evoking the detail naming the historic character of a building. I wanted to maintain the details like nineteen century moulding ceiling, wooden door frames with stained glass, and opening in the roof- just above the original stair case or tall windows, typical for the surrounded area. The important case in this concept was to shows the respect to the historic elements of the building while contrasting it with the contemporary way of design spaces for children.

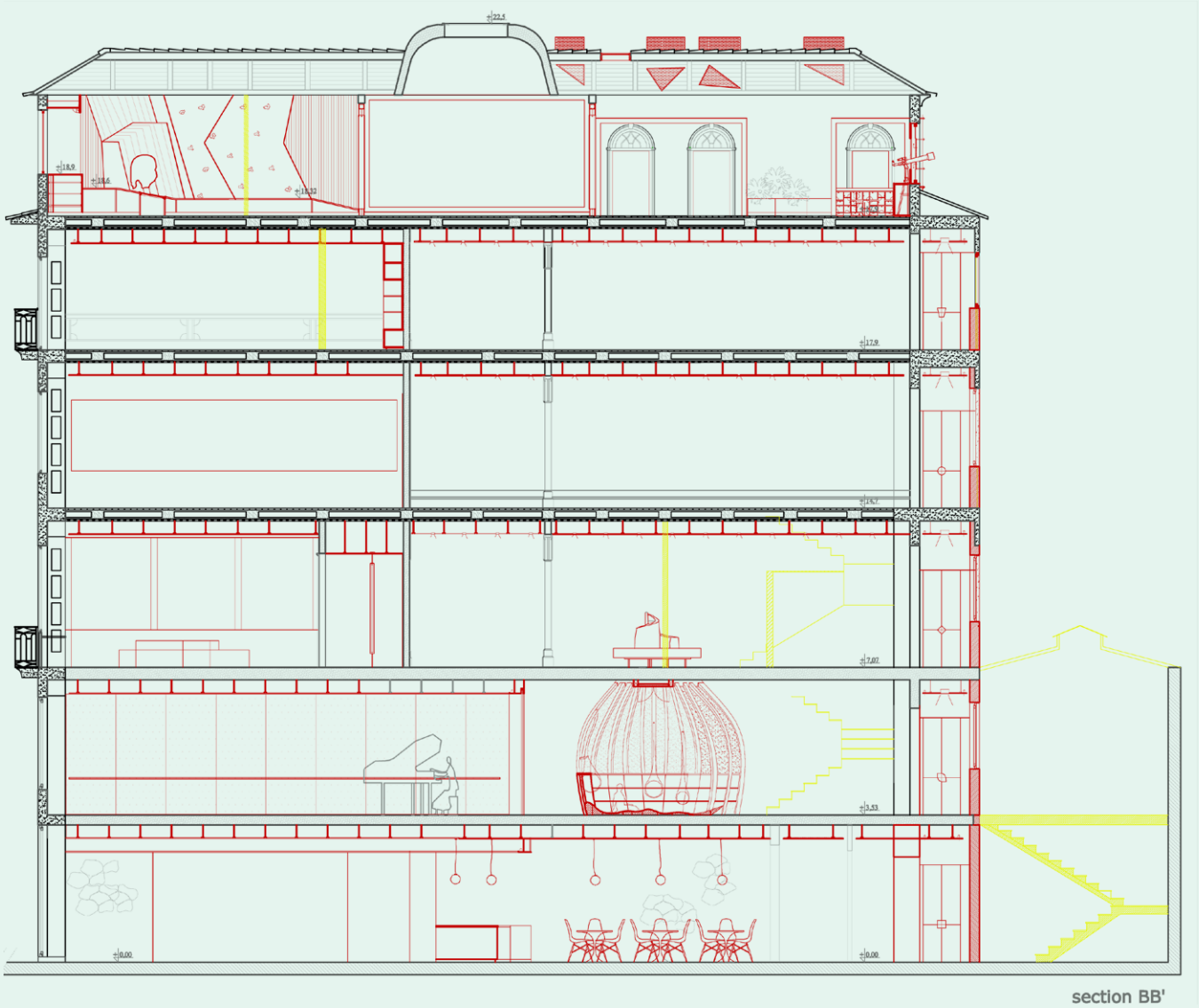
Before I started to find out a form and a function of the building, I familiarized with the philosophy of how children perceive a space and orientated oneself in it. Knowing that young men orientate his world using codes, comparisons and significances setting centers, directions and area, I could shape the concept of the project. As a result, the space has multiple activities character to engage the senses and stimulate creativity of child. Colorful custom play and art pieces, symbolize the character of the activities- educational or relaxing like climbing wall, musical elements, extensive plantings all provide fun for Interactive School residents. The idea of interior architecture was to attribute one color to each floor, depending on its symbolism and the activities planned for this floor. Thus,

50. colour proposal/ section A-A’



51. section A-A', drawings before and after intervention

52. colour proposal / section B-B’



53. section B-B’ , drawings before and after intervention

54. colour proposal / section C-C', D-D'

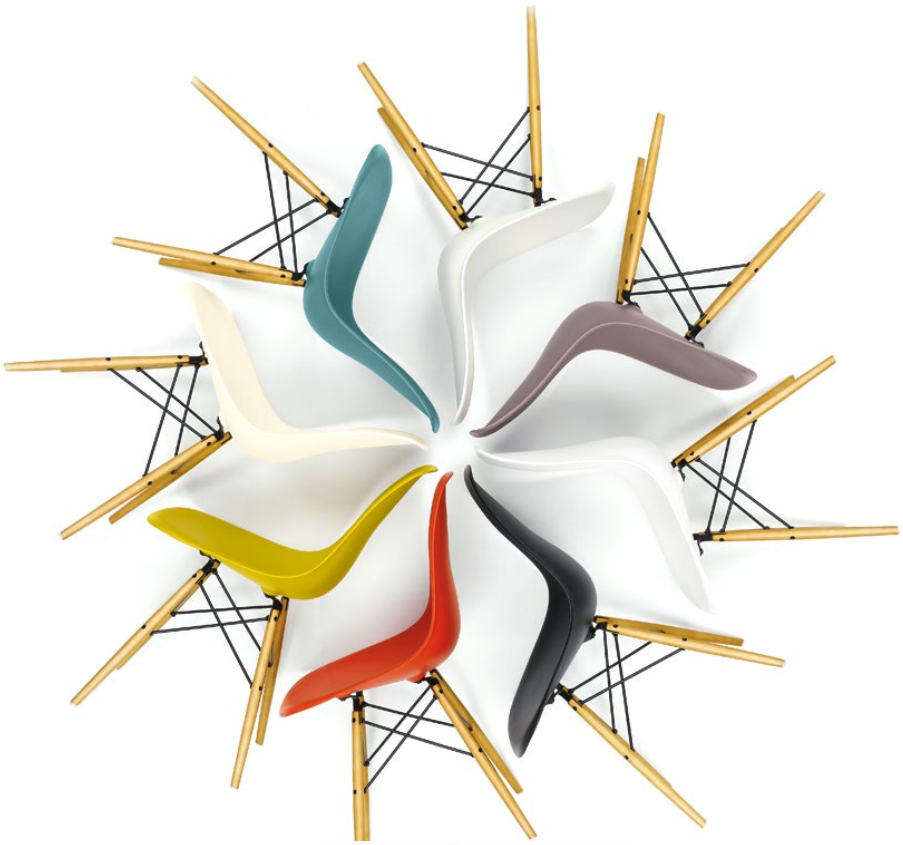
55. drawings befor and after intervention

Ground floor is ascribed orange color

(Color symbolism was already explained in the chapter "The way children perceive the world and architecture".)

The ground floor consists of a reception, a cafeteria – paper shop, a changing place, toilets for girls and boys and an access to the elevator. Ten- centimeter-long vertical corian panels create a half-transparent wall connecting two levels: the ground floor with the first floor. They shape an organic bench on the ground floor and form a "tunnel" under the stairs. Light and shadows illuminate the space in between and create a different mood, depending on the needs. The floor is finished with Taralay Impression&Uni, vinyl floor Uni 6130 Potiron, with the wooden floor separation between the cloak room and the organic bench. Tables in the cafeteria are varnished with the color of upcoming levels, chairs are Eames Plastic Side Chair DSW in various colors made by Vitra. The illumination above "the communication road" and the cloak room is installed in the suspended ceiling, using uintessence Recessed spotlightwith LED by ERCO; The suspended lamps above tables, bar desk and reception are the GLO-BALL S2 CO, lighting above the stairs (to the upcoming first floor) comes from the same collection; GLO-BALL S2 CO, GLO-BALL S1 CO, are suspended from the ceiling of the first floor .The level is supplied with toilets for boys and girls, cabinet support, an access to the elevator, and an evacuation entrance.

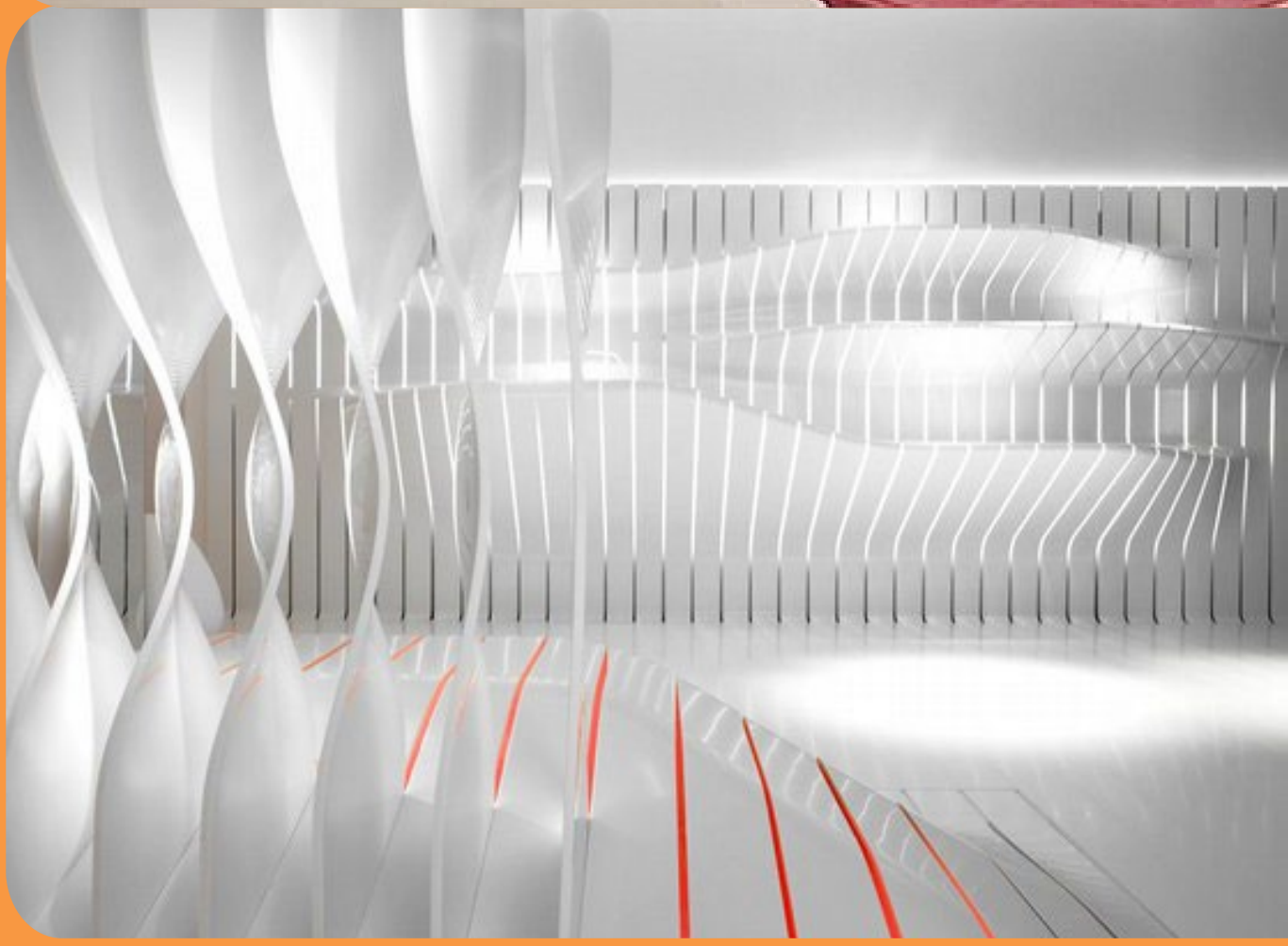
Space division	Area
Cafeteria and store book	33,5cm/2
Toilets for girls	3,36 cm/2
Toilets for boys	3,86 cm/2
Reception	8,6 cm/2
Auxiliary room	2,5 cm/2
Cloak room	5,25 cm/2
Total	115cm/2



Inspirations

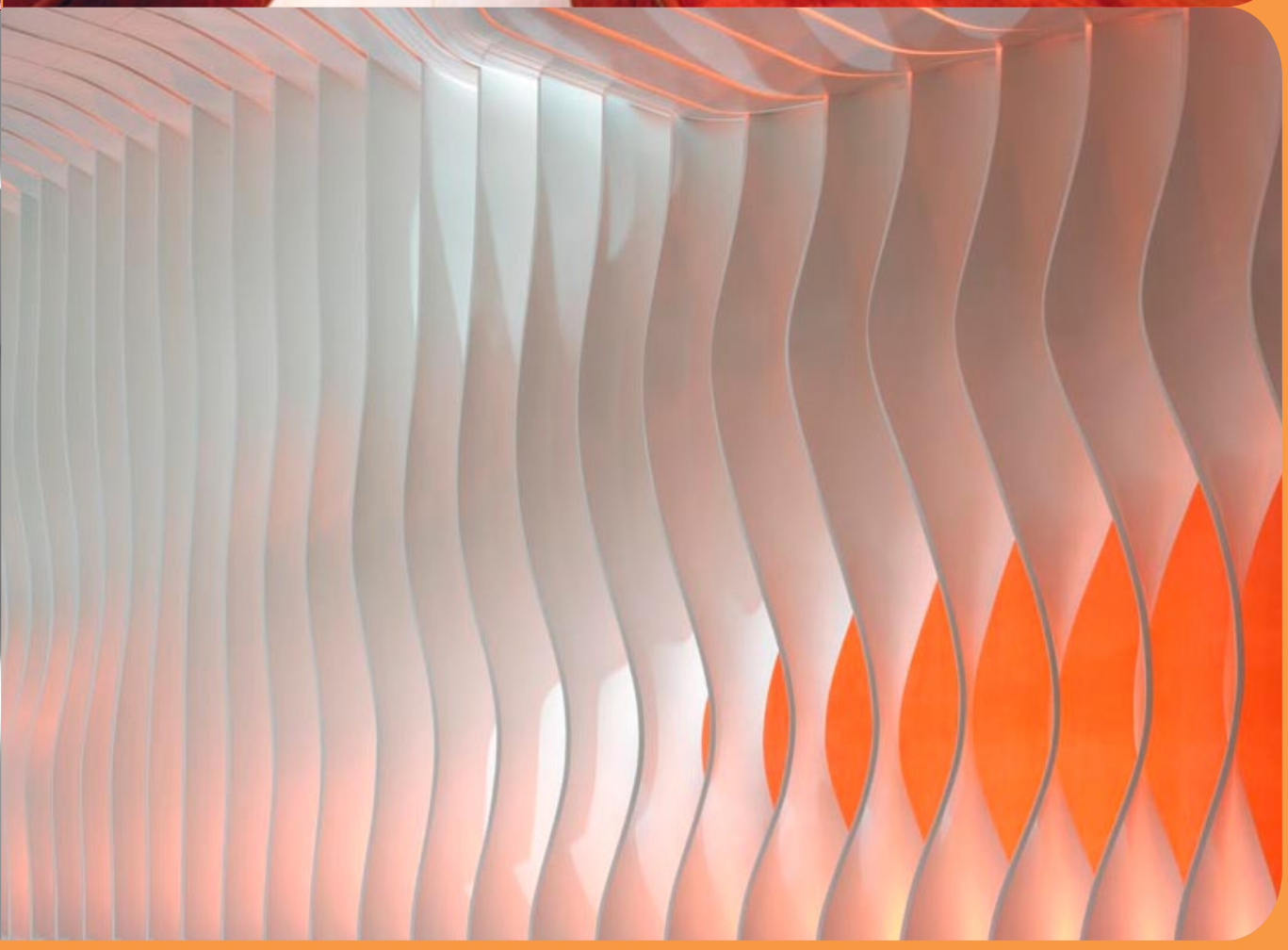
55. / 56. DKX Chairs - from Vitra

57. Kid's Republic 3 in Shenyang



58. Corian Super-Surfaces Showroom in Milan

59. Kid's Republic 3 in Shenyang

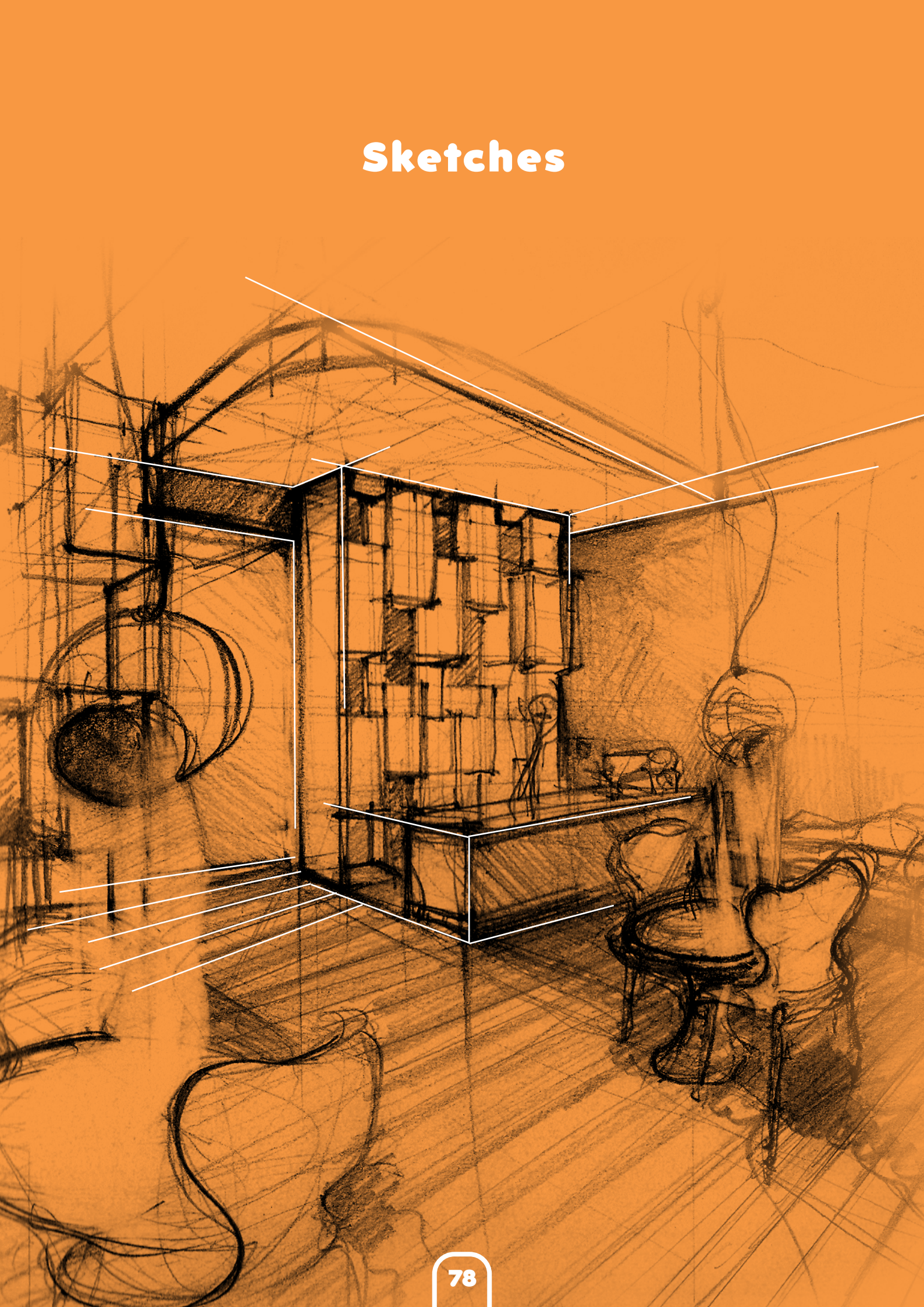


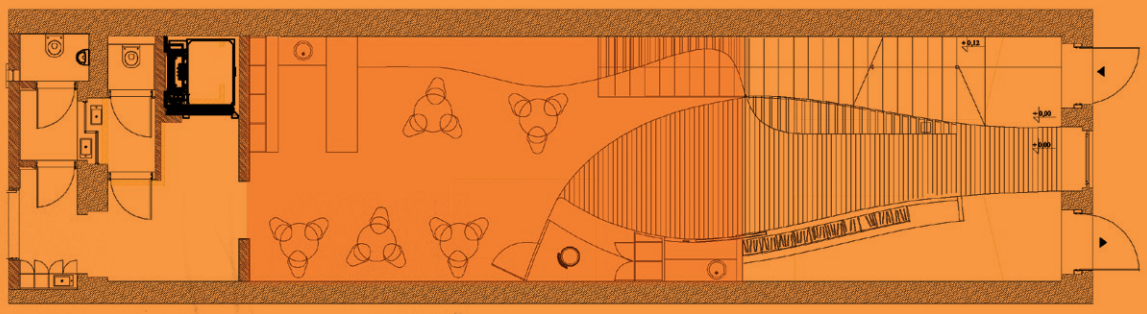
60. Corian Super-Surfaces Showroom in Milan

61. Kid’s Republic 3 in Shenyang

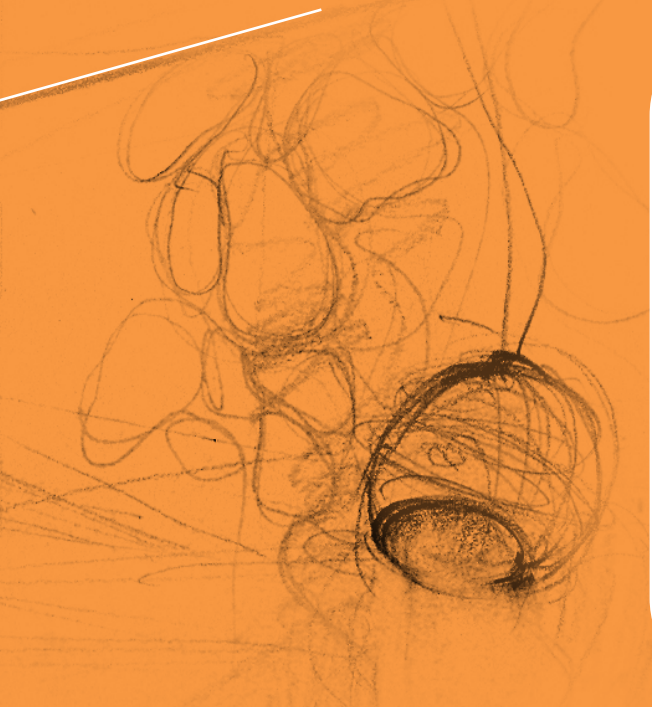
62. ground floor - drawings of the build and demolished walls / colour proposal

Sketches

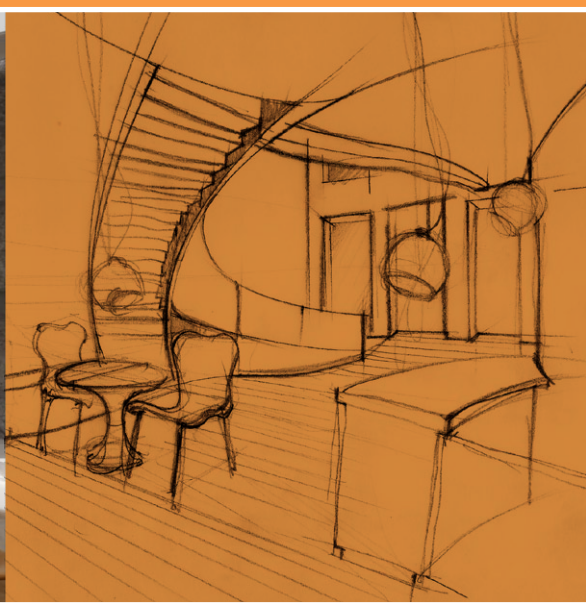




63. plan of the ground floor



64./ 65./ sketches of the bar and the bookstore



The maquet of the Ground floor

66. corridor - access to the elevator and toilets / 67. view from the reception on the bookstore and a bar / 68. cloak-room and the entrance

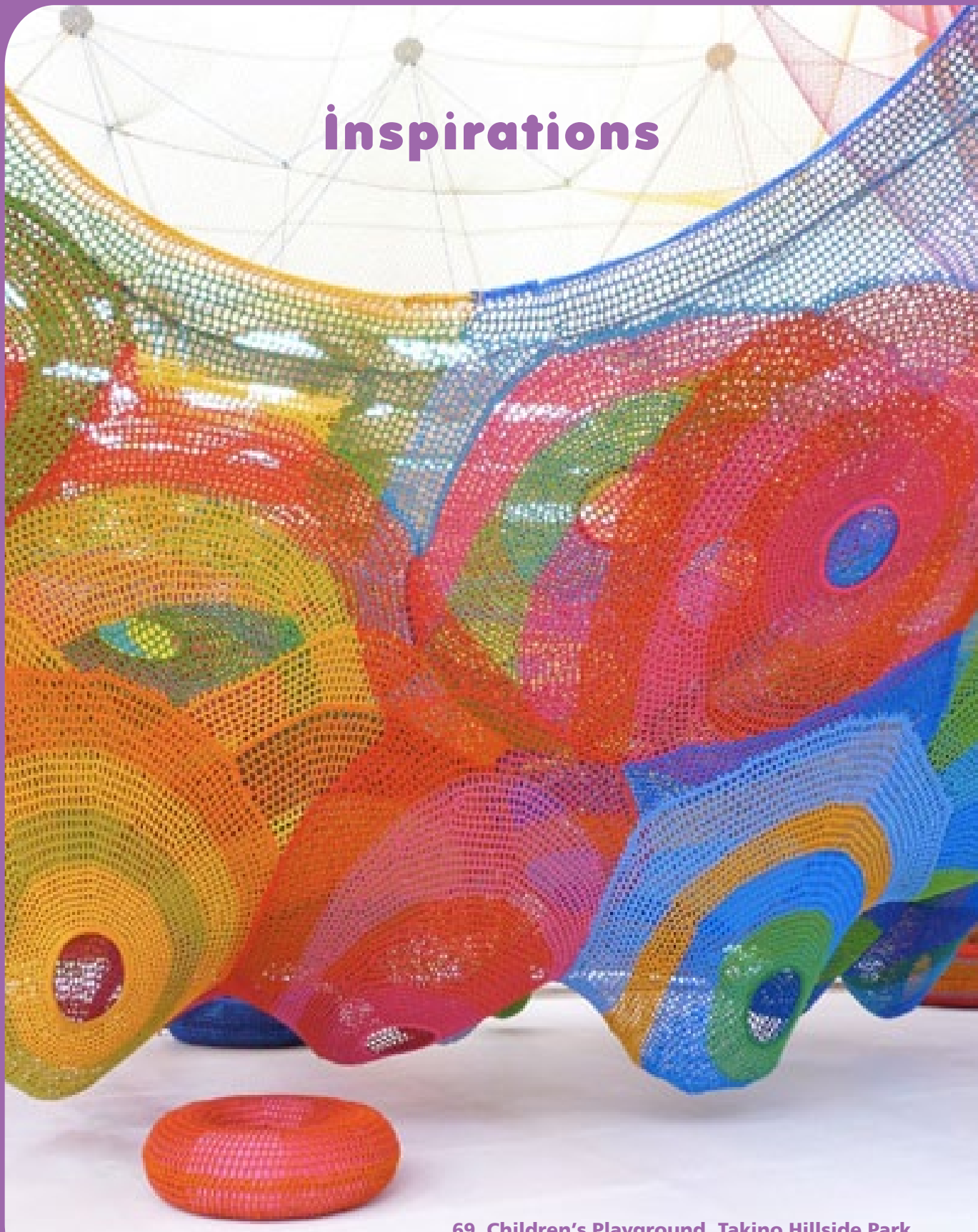
First floor is ascribed violet color

This level is “associated” with dreaming, relaxing and dance. Children can express themselves in a room where light is changed, depending on the theme of exercises. One room of the classroom is covered with mirrors to visually widen and brighten the space. The transparent wall is made of curved glass steel profiles and ten-centimeters-long vertical corian panels that visually link the floor with the ground floor. The panels, that partly follow the shape of the music classroom, smoothly change their vertical orientation to form the shape of the bench on the ground floor. Light and shadows, forms and colors play an important role in the interior. To get into the world of imagination, to read books, have fun or relax children may use the “Onion”. It has organic interior with smooth, unshaped floor made of memory foam where suspended elastic “drops” allow children to float in the air when time for fun comes. In the cozy interior they may calm down, read, play and listen to stories. The organic shape gives children a sense of security and safety. Subconsciousness recollects the feeling of being inside of mother’s womb. The “Onion” is fitted with an elastic “suit” that provides some transparency between the inside and the outside (the corridor). RGB Led illumination changes the color in the interior, influencing the ambient and atmosphere inside. The object is made of sustainable eucalyptus wooden profiles that are arranged to meet in the upper wooden ring. The oval has an inside round “window” with Leds that illuminate the interior. Between the vertical wooden panels is stretched licra/ Sublime/ which transmits light from the inside to the outside. All the books and toys are stored in the pieces of furniture that follow the “onion” shape on the floor.

To introduce the sound sensation, children can get into interaction with the sound wall that “speaks and plays” with children, at the same time visually connecting two levels. The level is supplied with toilets for boys and girls, cabinet support and an access to the elevator.

Space division	Area
Music, interaction room	40 m/2
Communication	34 m/2
“The Onion”	11 m/2
Toilets for girls	2,5 m/2
Toilets for boys	5,25 cm/2
Total	115 m/2

Inspirations



69. Children's Playground, Takino Hillside Park

70. Livingstones, Soft Pebbles designed by Smarin

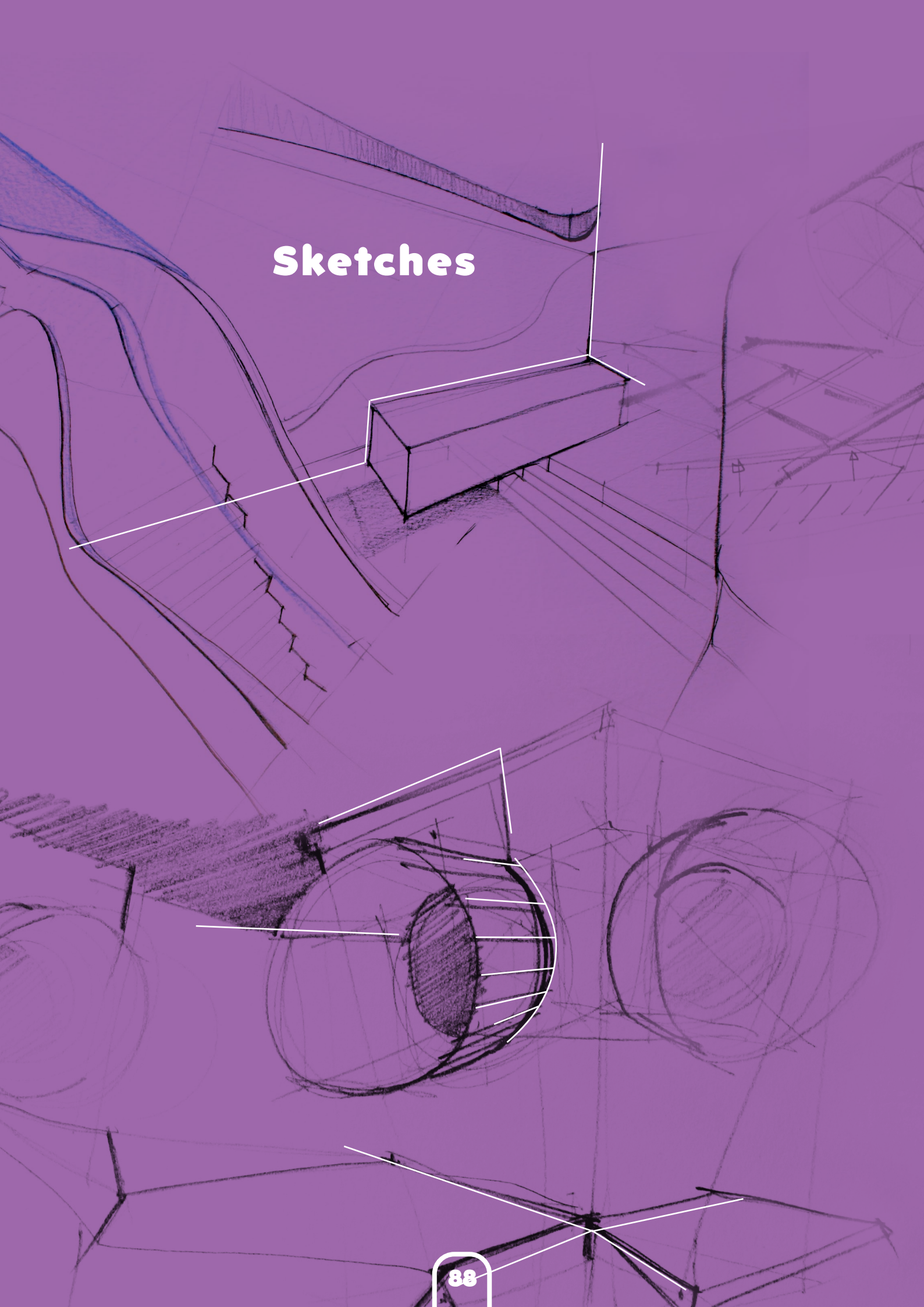
71. wall pannels designed by karim-rashid

72. the speaker-wall

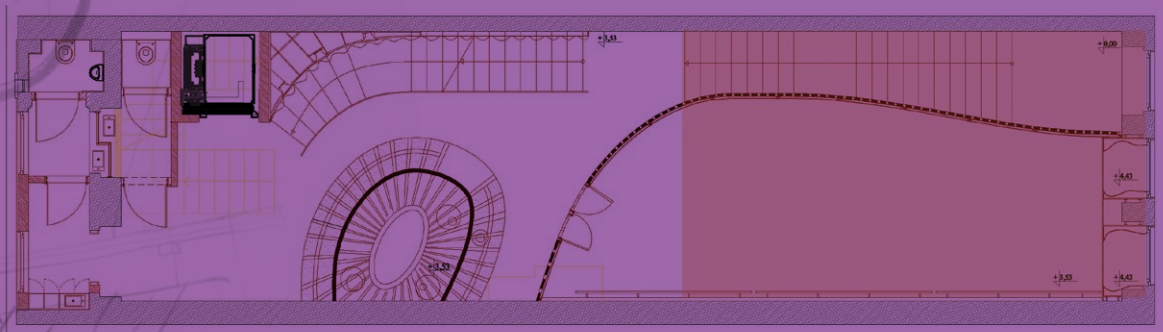
73. the composition with violets

74. first floor - drawings of the build and demolished walls / colour proposal

Sketches



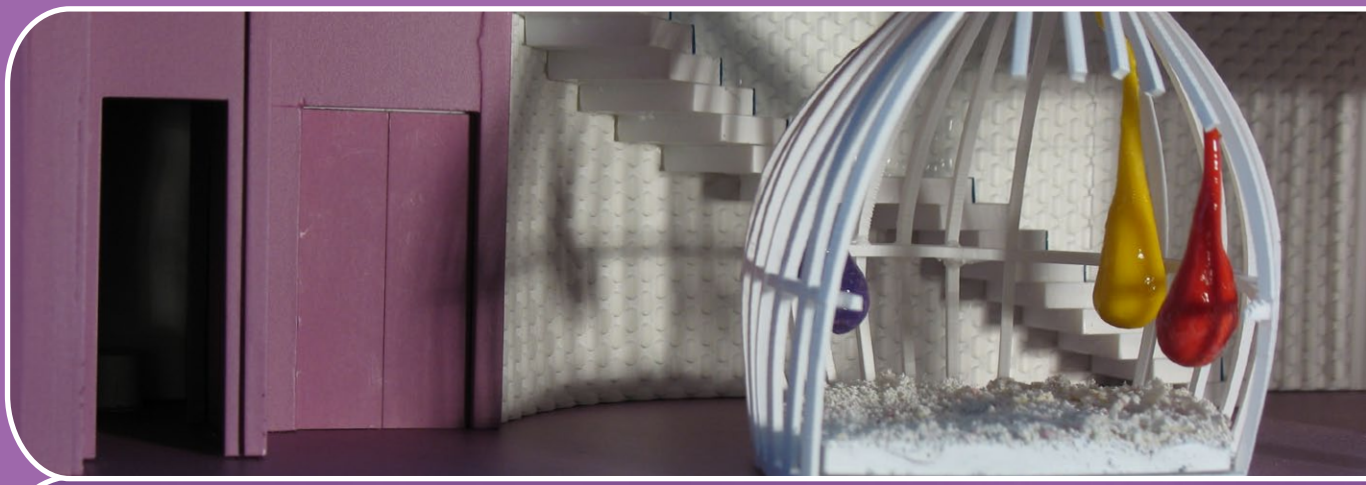
75. plan of the first floor

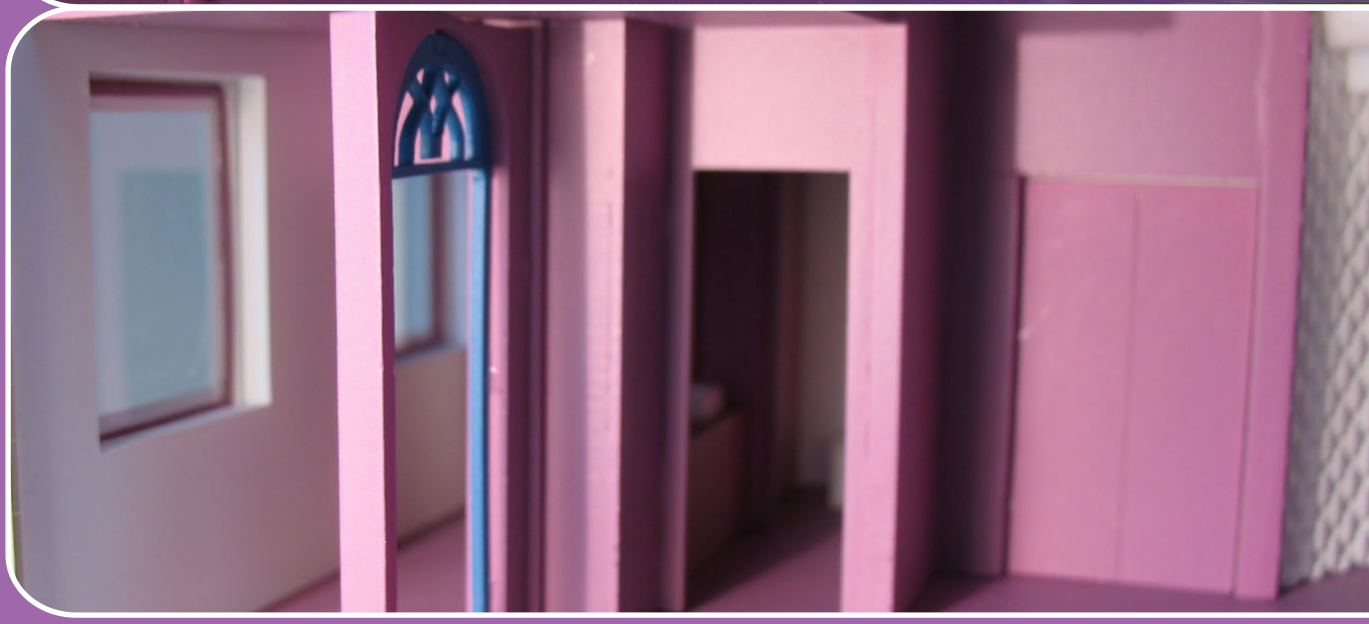


76. the conceptual sketch of the music room

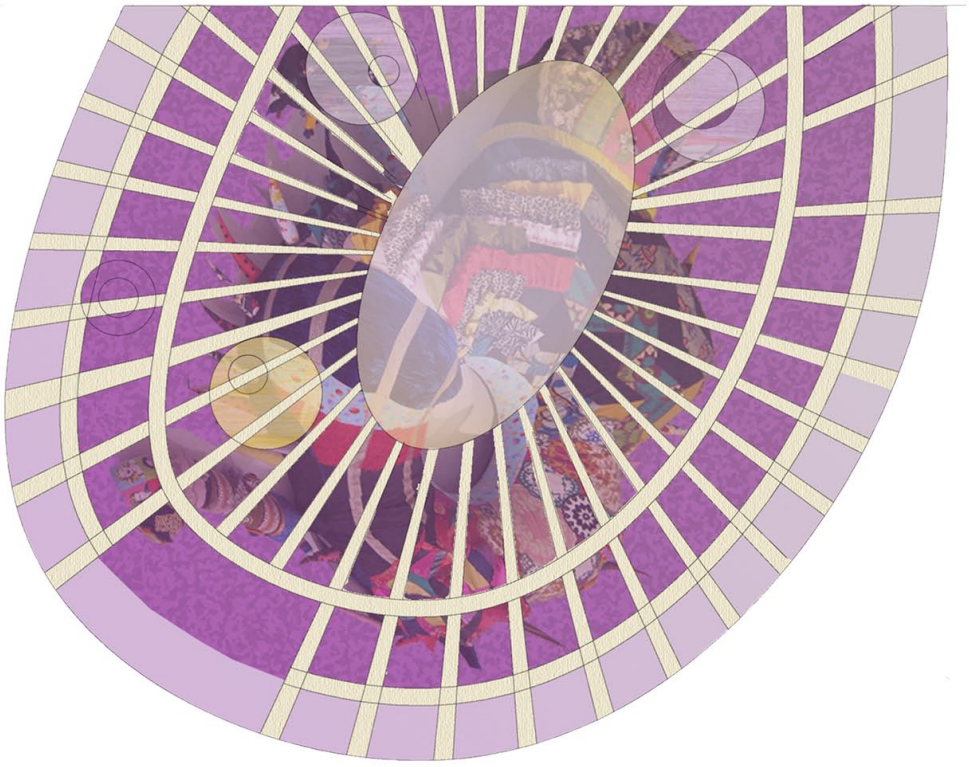
The maquet of the First floor

77. the room for music, dance and theater actions



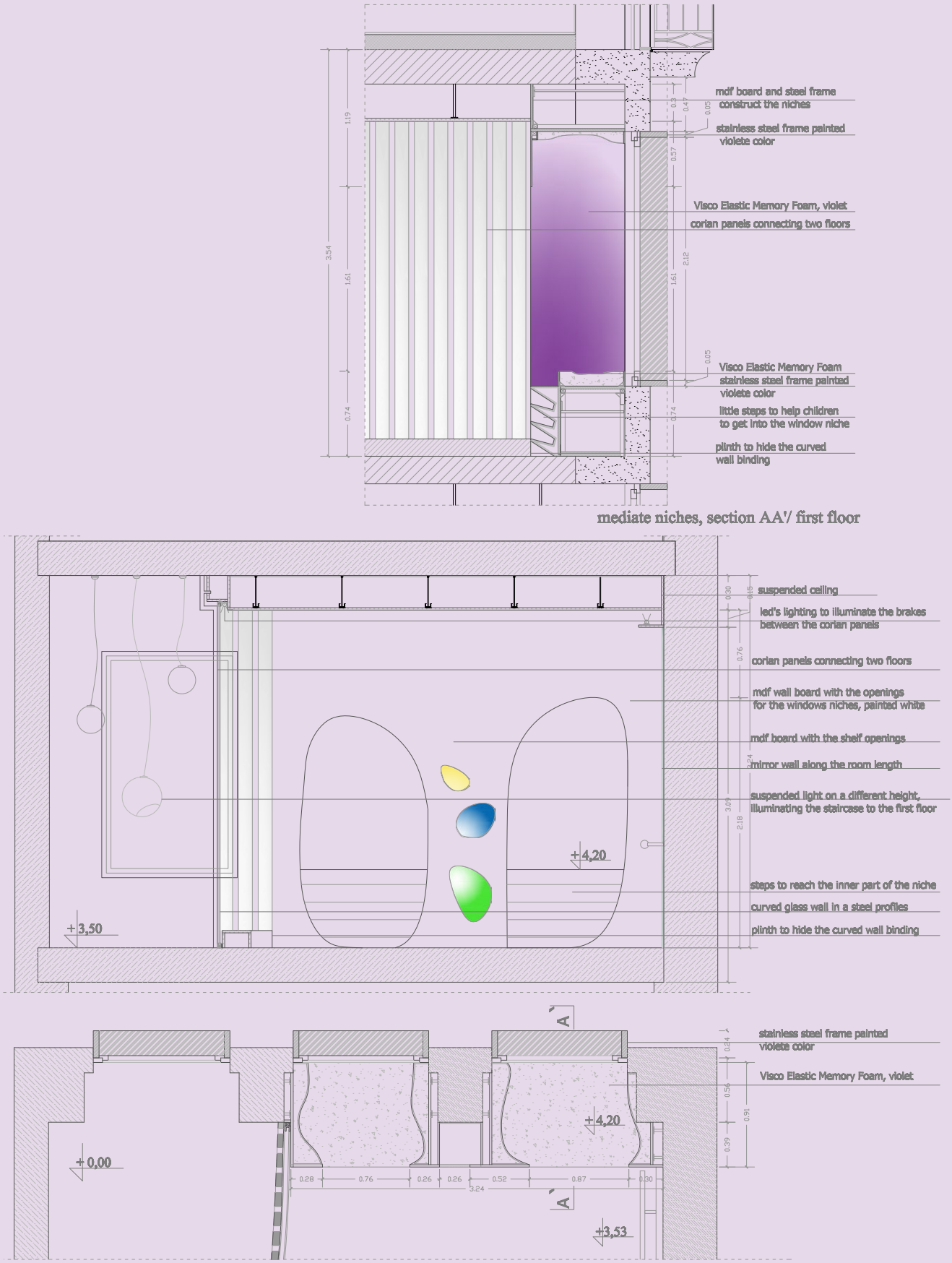


78. photo of the corridor and “the Onion” space- for reading and relax / 79. the room for music, dance and theater actions / 80. the corridor and access to the elevation



“The Onion”- space for reading and relaxing

81. the view through the window on the stairs



82. the detail of the windows-mediate niches at the first floor

Second floor is ascribed blue color

The level consists of open space where children's works made during workshops are presented. The central Tatlin sofa organizes the communication. Children's works are exhibited on a specially designed wall shelf that has a white front with the interior in a strong color – filled with plush and halogen light.

There is also a multifunctional room. First, it shows respect for the history of the building by exposing the beautiful nineteen-century ceiling and decors. The surroundings reflect in the "mirrored" bench which is finished with Sibu. Secondly, the old niches, which in the past were textile magazines, are engaged. They have been turned the "optic chambers" where children can experiment with the optic and perspective visualizations. The communication in the blue corridor is lighted by fluorescence light on the extended parts of the suspended ceiling. The level is supplied with toilets for boys and girls, the cabinet support and access to the elevator.

Space division	Area
Interactive room with optic niches	38 m/2
communication	24 m/2
Exposition area	21 cm/2
Toilets for girls	2,5 cm/2
Toilets for boys	5,25 cm/2
Total	115 m/2

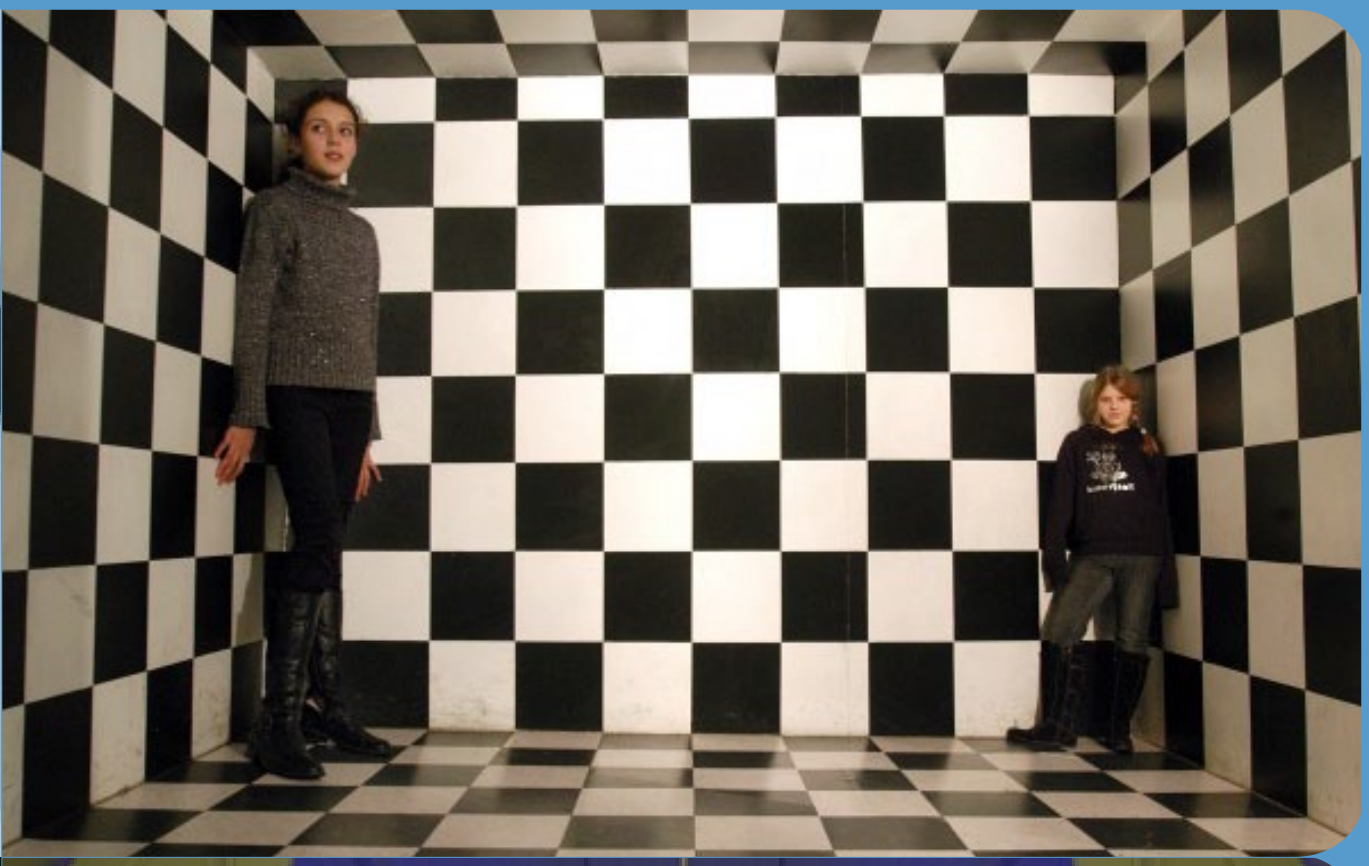
Inspirations

83. the boy playing with the shadows; the shadow theatre

84. instalation made by Olafur Eliasson

85. art work made by Olafur Eliasson at Tanya Bonakard gallery

86. Amesa chamber in the children's center "Experyment"

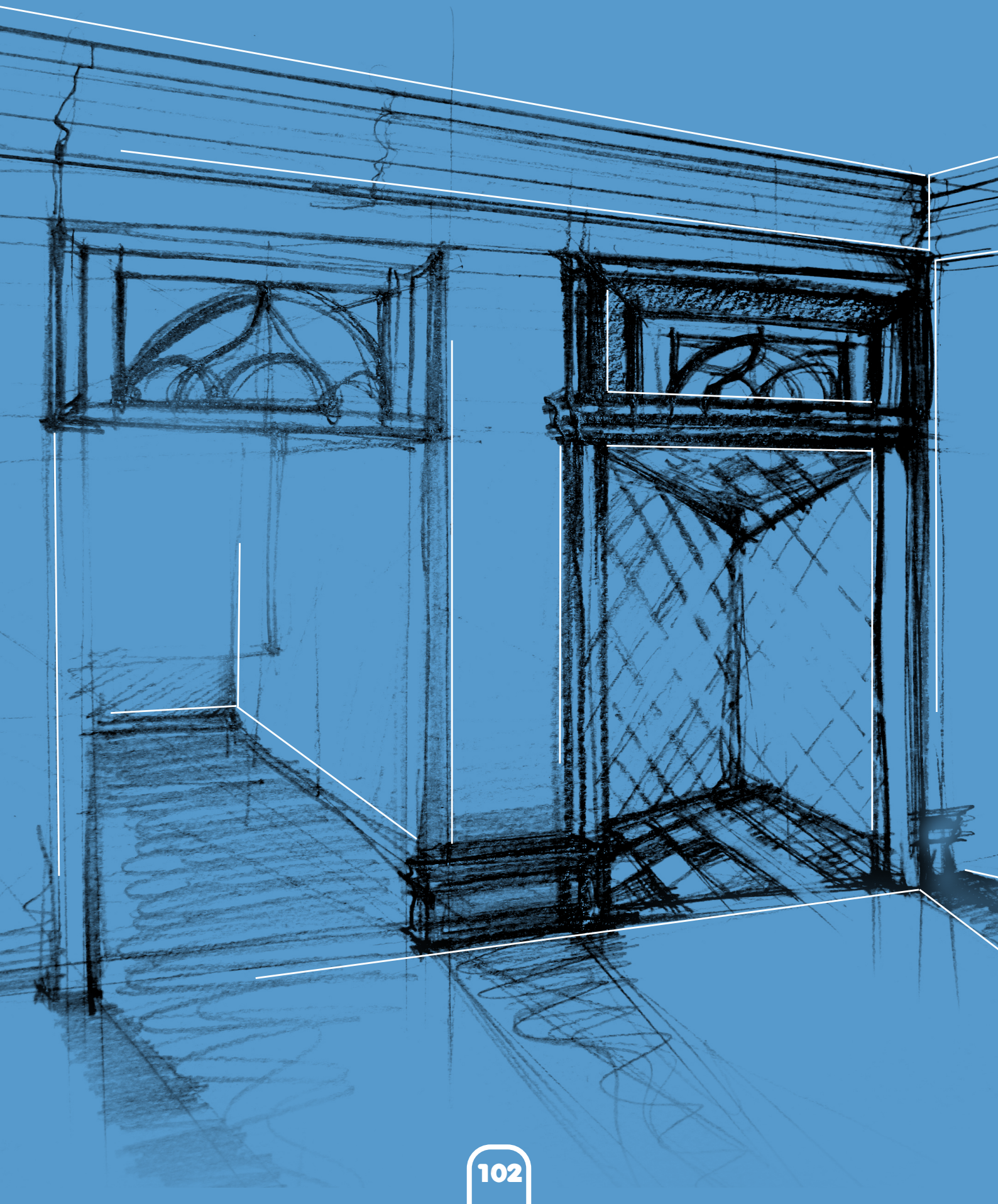


87. art work made by Olafur Eliasson at Tanya Bonakard gallery

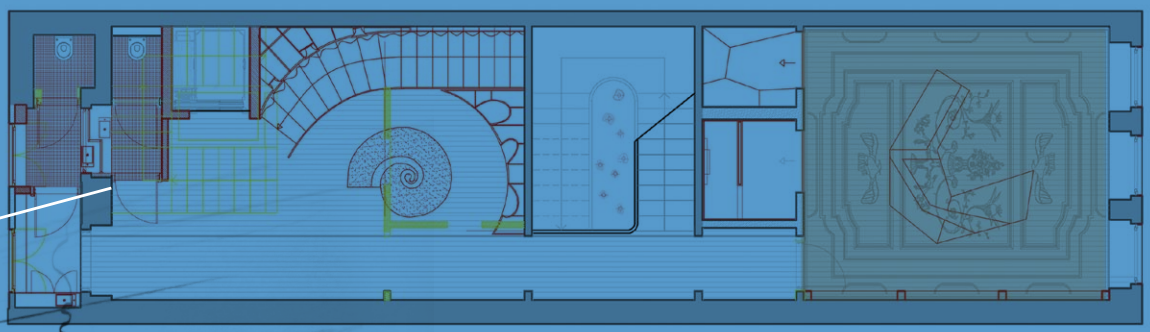
88. the composition of geometric shapes

89. second floor - drawings of the build and demolished walls / colour proposal

Sketches

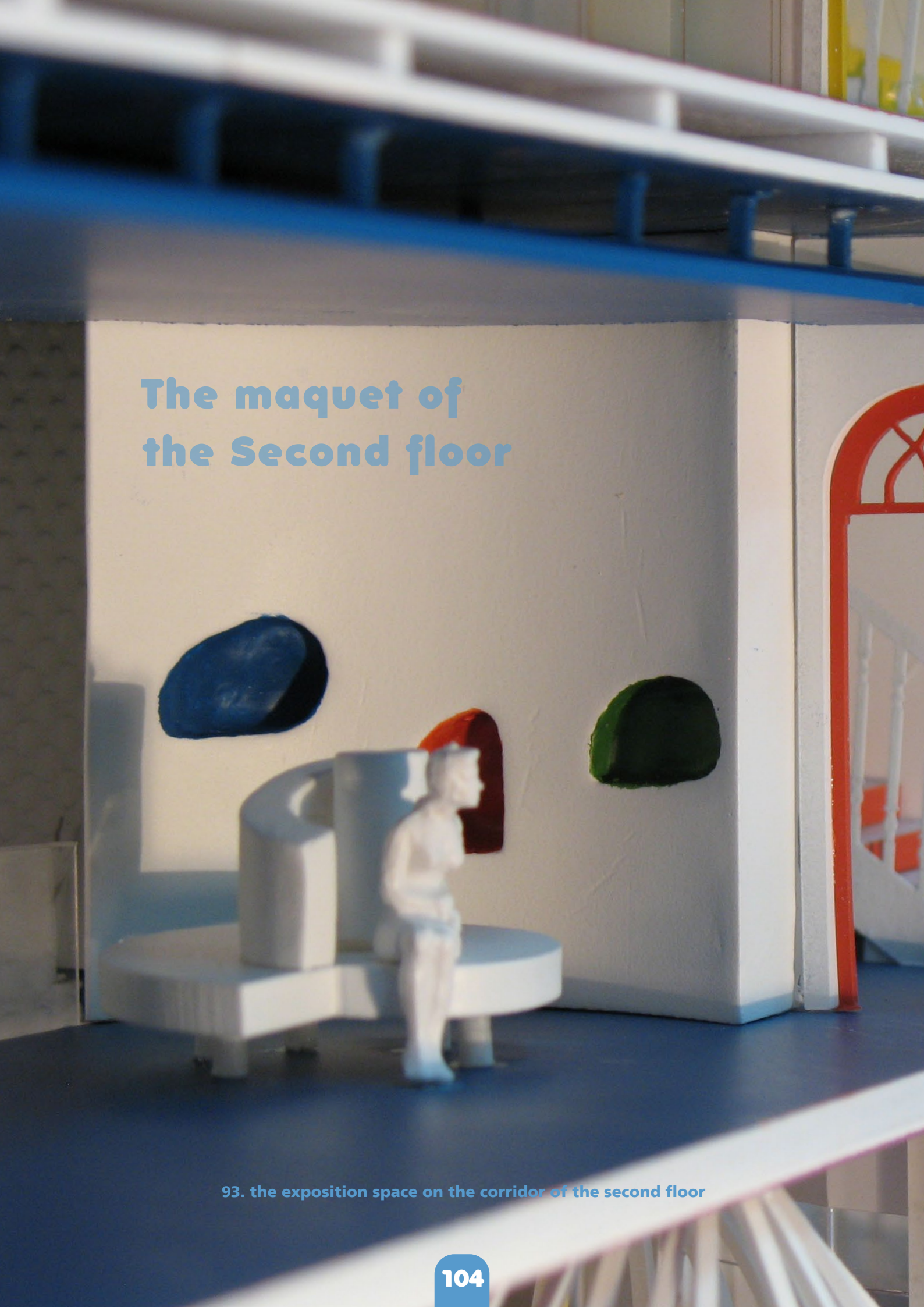


90. plan of the second floor



91. sketches of the shadows and optic chamber / 92. the interactive room

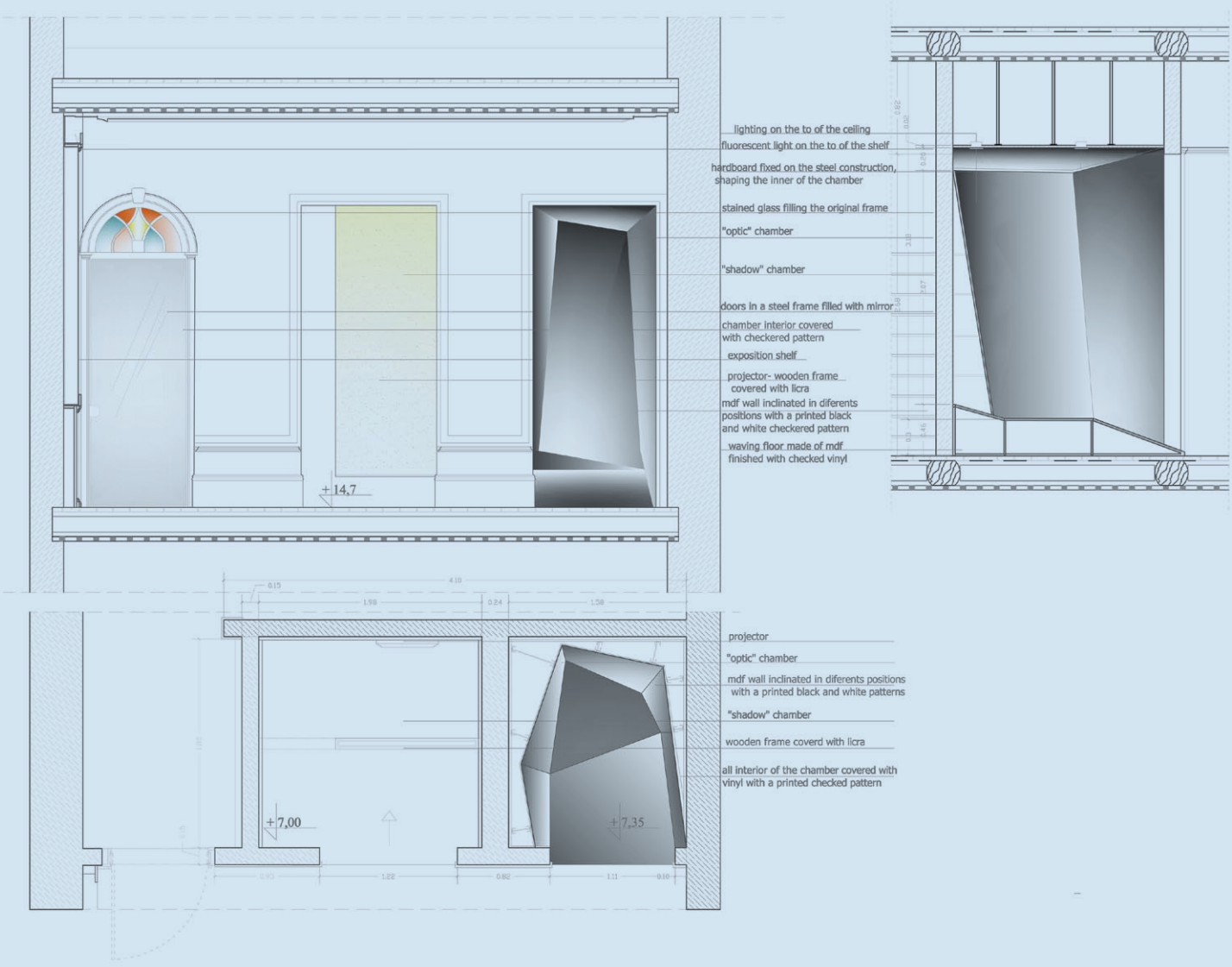
The maquet of the Second floor



93. the exposition space on the corridor of the second floor

94. the interactive room / 95. the open space- the corridor / 96. the staircase reaching the third floor

97. toilet



98. the detail of the optic chambers at the second floor

Third floor is ascribed red color

The level consists of the teacher's room for four to five adults and a director's office. The sliding door between those two spaces gives a possibility to enlarge a space in case of a meeting.

Cooking class – kitchen enables children to learn how to prepare simple food by themselves and get the basic information on healthy and ecological lifestyle. Space suffices for eight to twelve children with a teacher and is supplied with a cooking zone for children and a cooking-demonstration zone for the teacher. The room is supplied with the „washing hands" zone. The chairs the children sit on are replicas of the world-known designers' work. The communication in the red corridor is lighted by fluorescence light on the extended parts of the suspended ceiling. The level is supplied with toilets for boys and girls, the cabinet support and an access to the elevator.

Space division	Area
Cooking class	40 m/2
Teachers' room	12 m/2
Deirector's office	34 m/2
communication	11 m/2
Toilets for girls	2,5 m/2
Toilets for boys	5,25 m/2
Total	115 m/2

İnspirations

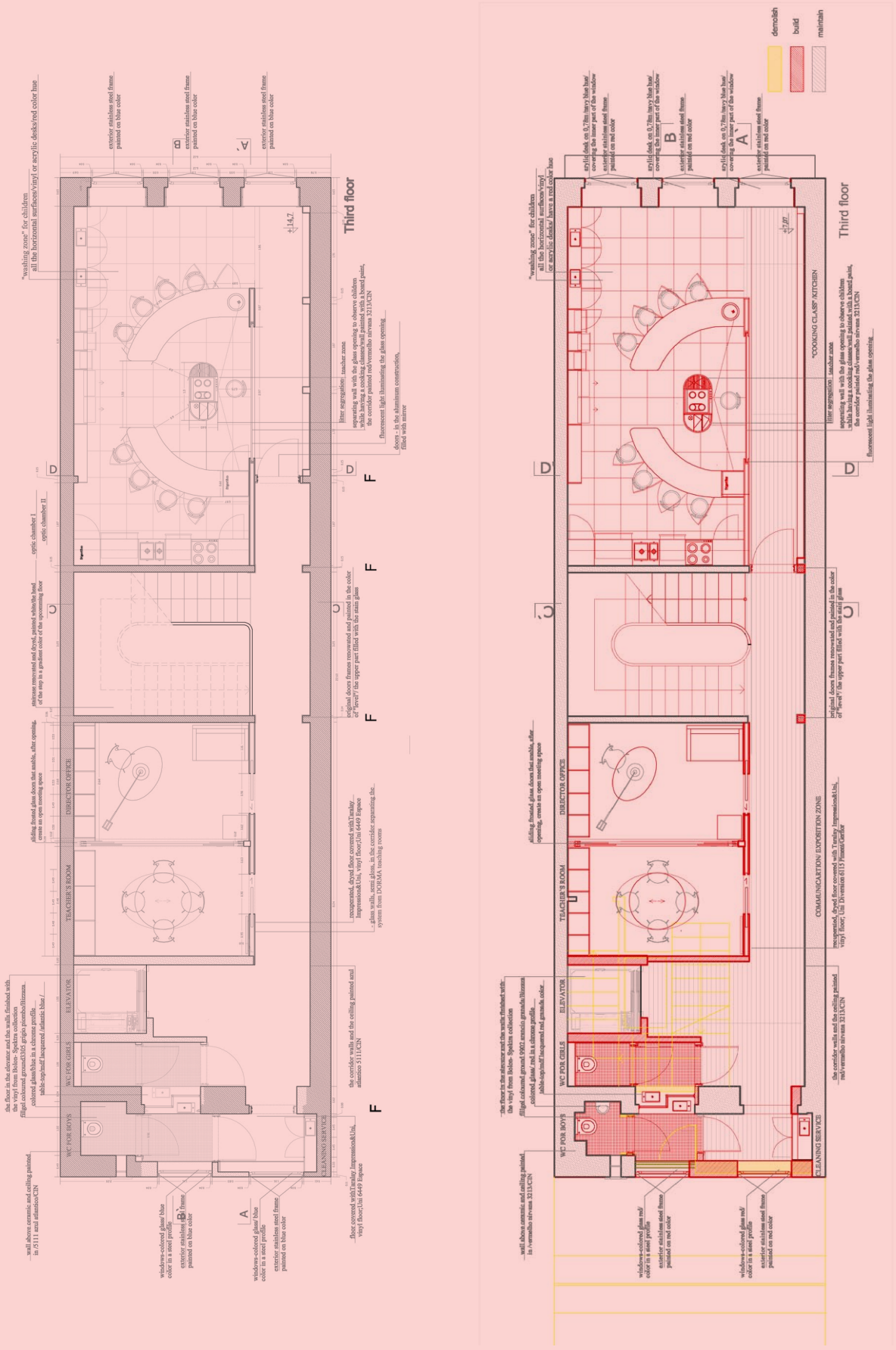
99. the furniture; the path stool made by Benjamin Hubert

100. the interior arranged with the rectangular-colorful pattern

101. children during the cooking classes

102. the table with the hands application

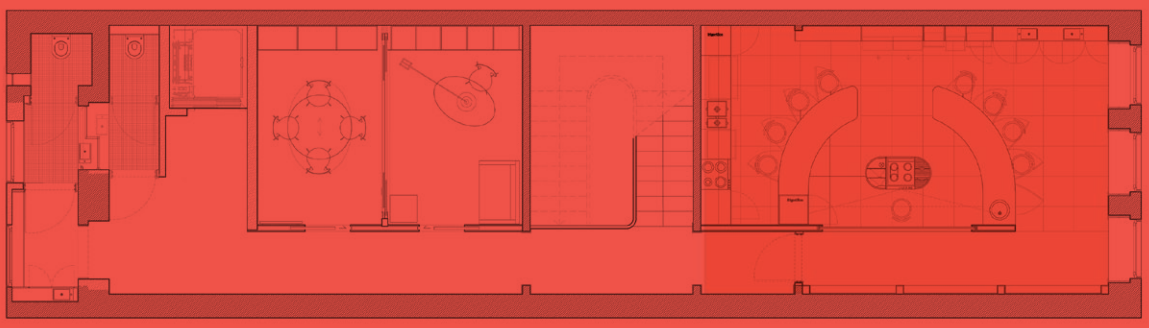
103 . The school interior crested McBride Charles Ryan



104. third floor - drawings of the build and demolished walls / colour proposal

Sketches

105. plan of the third floor



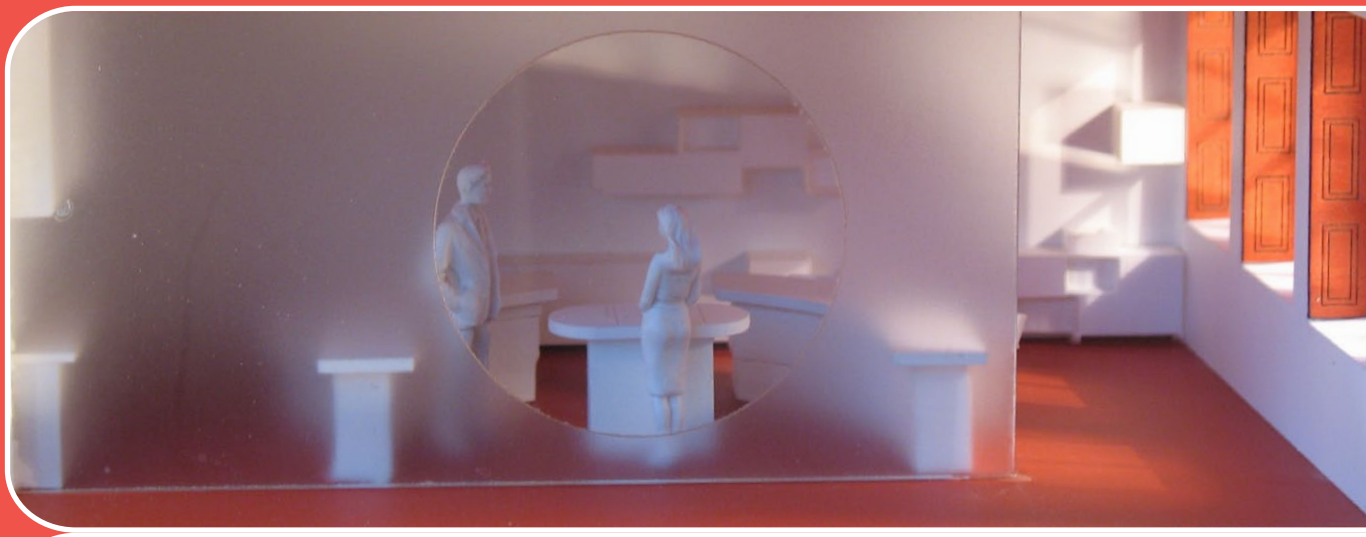
106. first concept

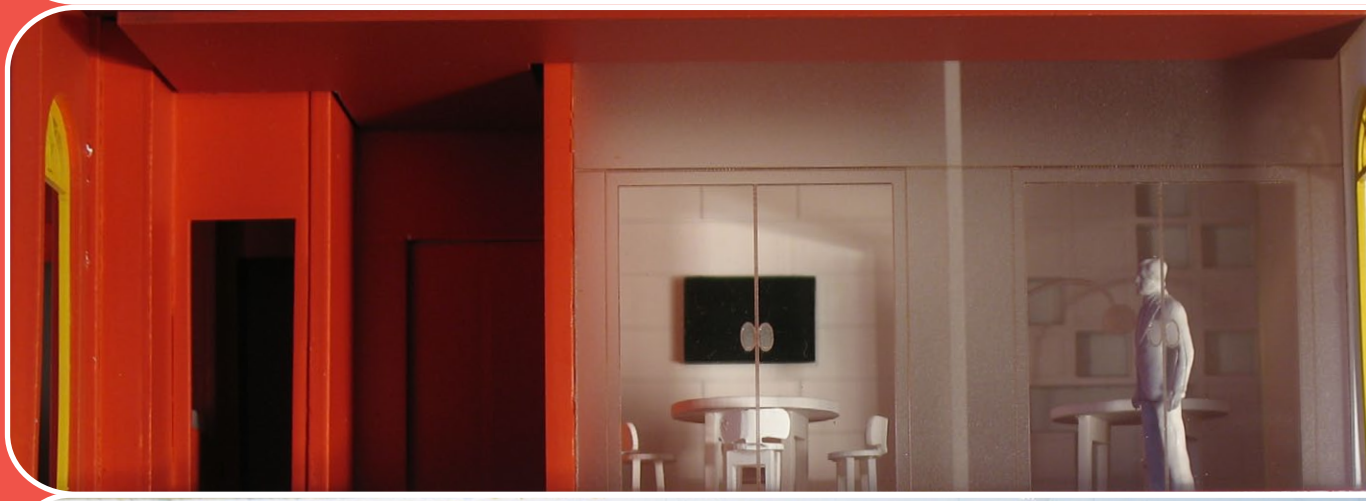
107. first concept

108. the cooking room

The maquet of the third floor

109. the corridor, access to the toilet





110. the cooking class / 111. the teachers room / 112. the corridor of the third floor

Fourth floor is ascribed yellow color

Yellow level consists of two teaching classrooms for eighteen children and two teachers. They are intended for architectural and design workshops and for language classes. Each room has fibra-glass pillars that connect two levels and introduce natural light inside of the room or artificial light when it is needed. They are connected and surrounded by common workshops desks, 74-centimeter high, and fixed to the inner part of the floor.

Interiors walls, made of pladure, have cavities with shelves or resting niches filled with soft, colored texture. Chairs suggested for this room are replicas of the ones made by famous designers, such as Patricia Urquiola Charles and Ray Eame, Verner Panton or Philip Starck. The communication in yellow corridor is lighted by fluorescence light on extended parts of the suspended ceiling. The floor is supplied with toilets for boys and girls, cabinet support and an elevator.

Space division	Area
Language, computer class	28 m/2
Workshop room	21,5 m/2
Communication	37 m/2
Toilets for girls	2,5 m/2
Toilets for boys	5,25 m/2
Total	115 m/2

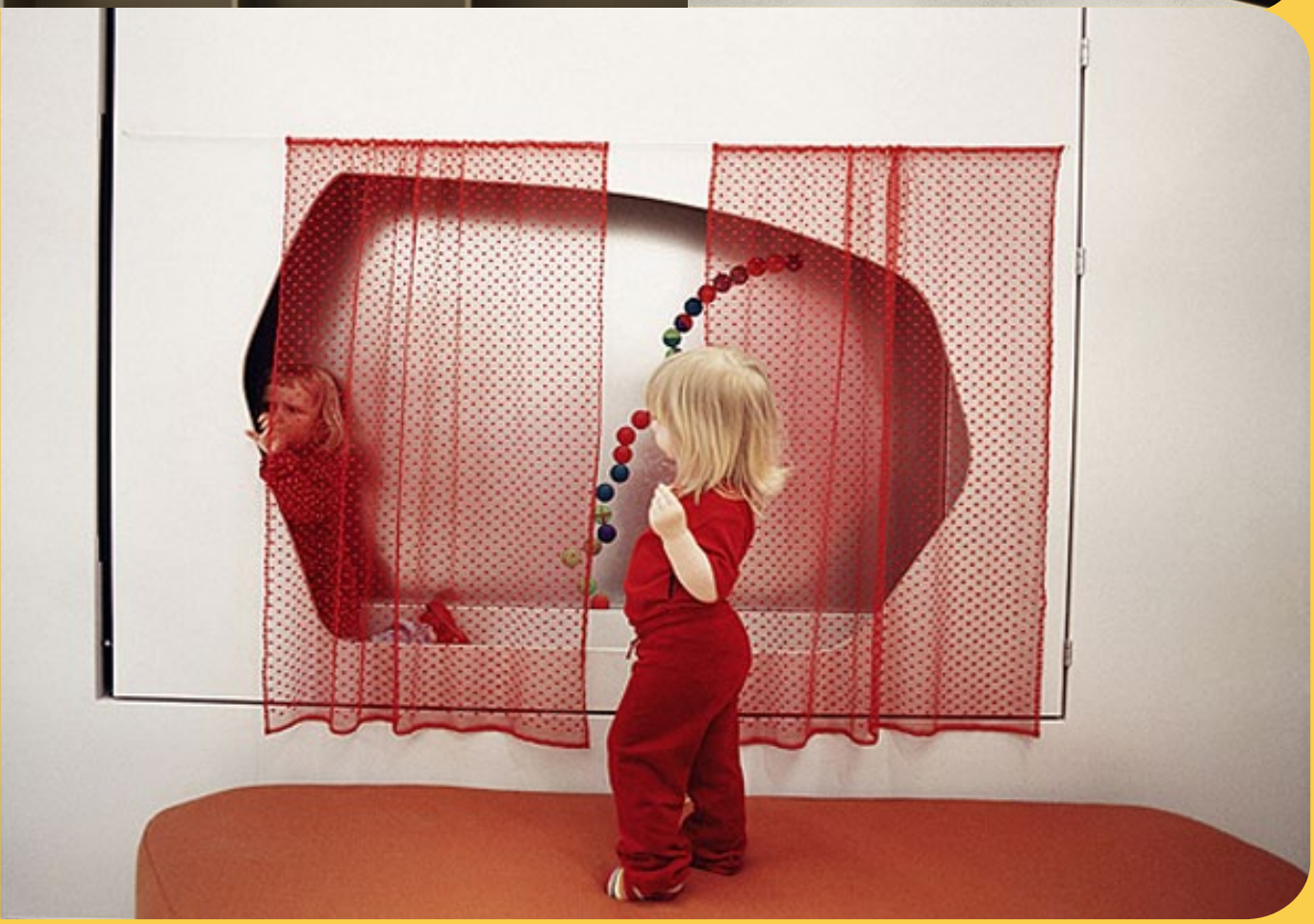
Inspirations

113. the kindergarten in Tromso - Norway

114. the new Mediatheque in Gorizia designed by Waltritsch a + u

115. family house - bathroom

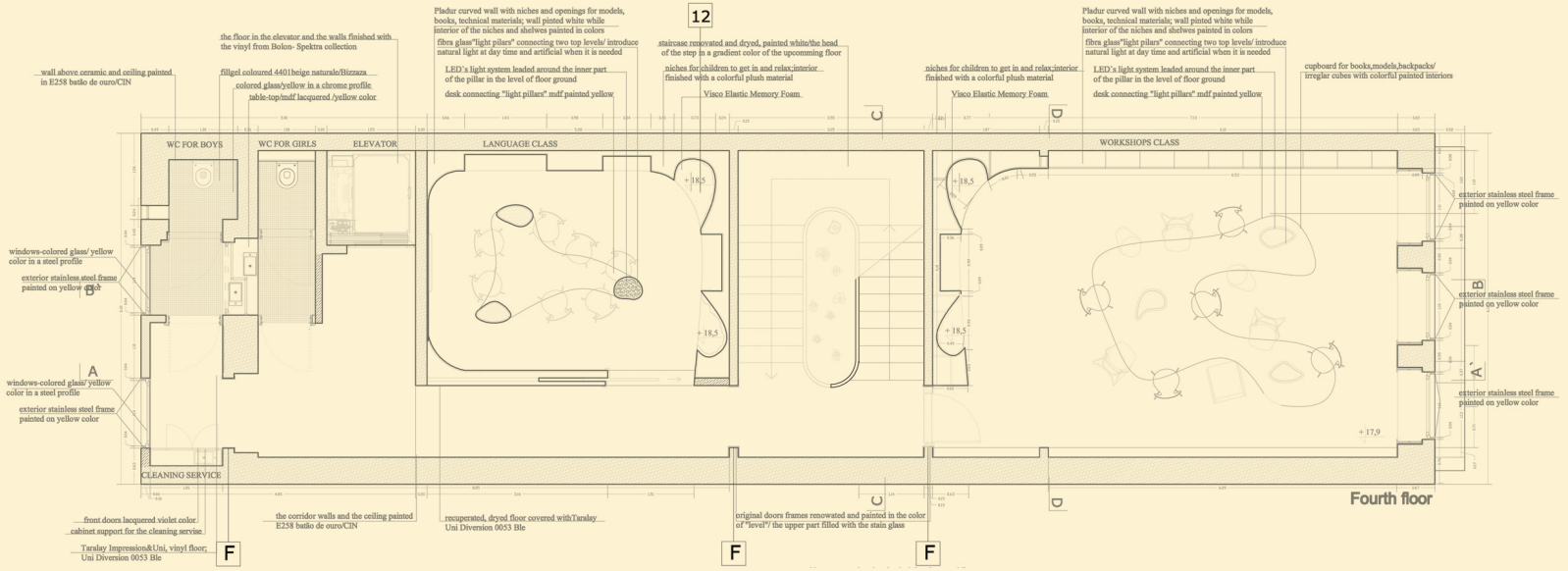
116. the new Mediatheque in Gorizia designed by Waltritsch a + u
117. the kindergarten in Tromso - Norway

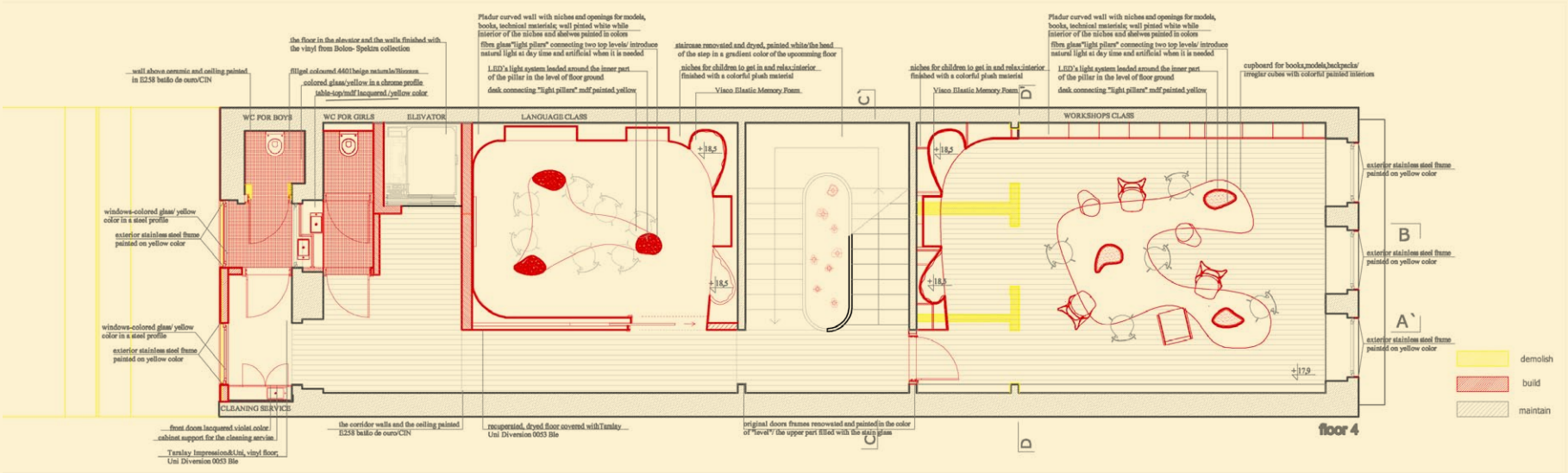


118. multifunctional niches

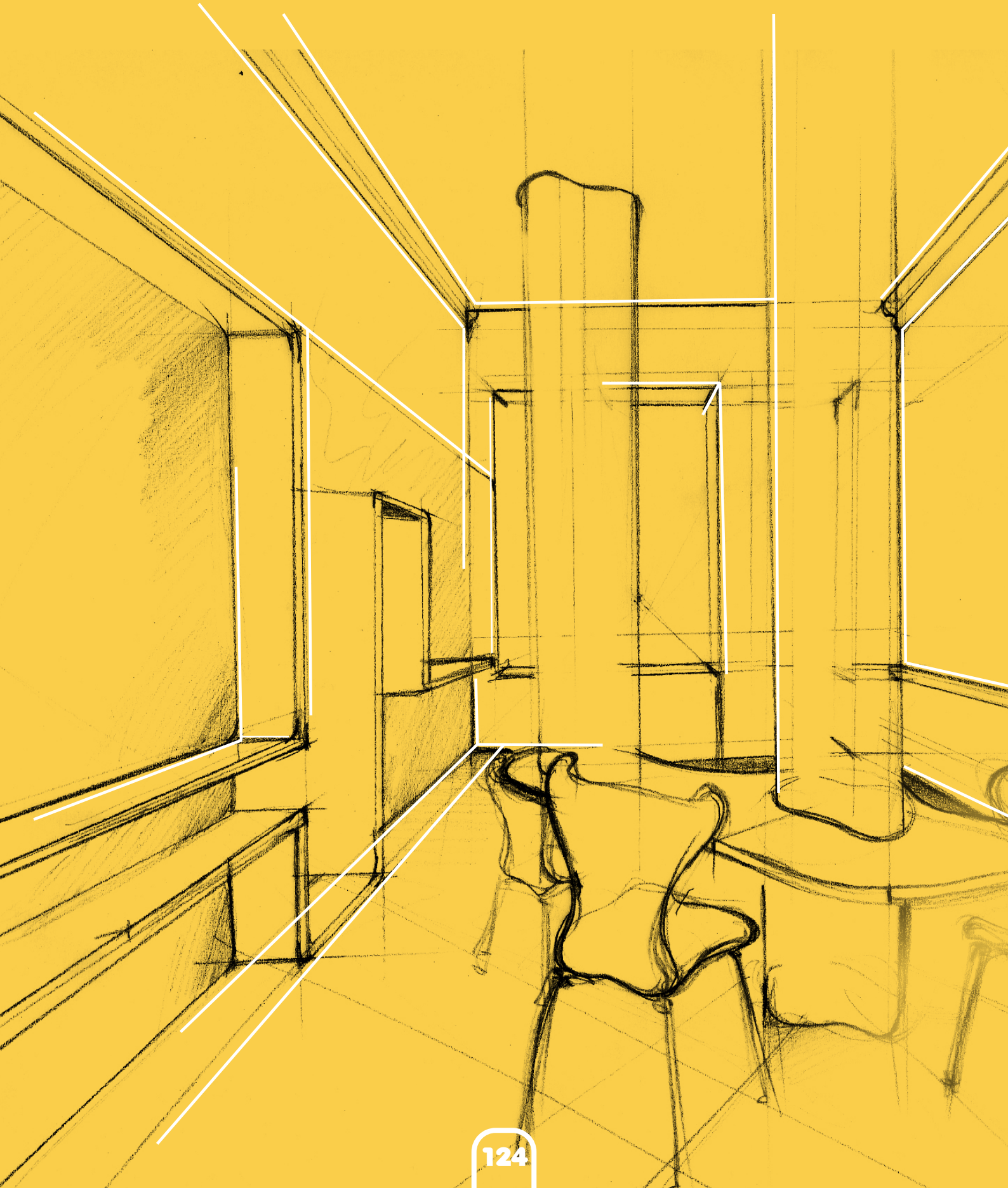
119. a boy during the architectural workshops

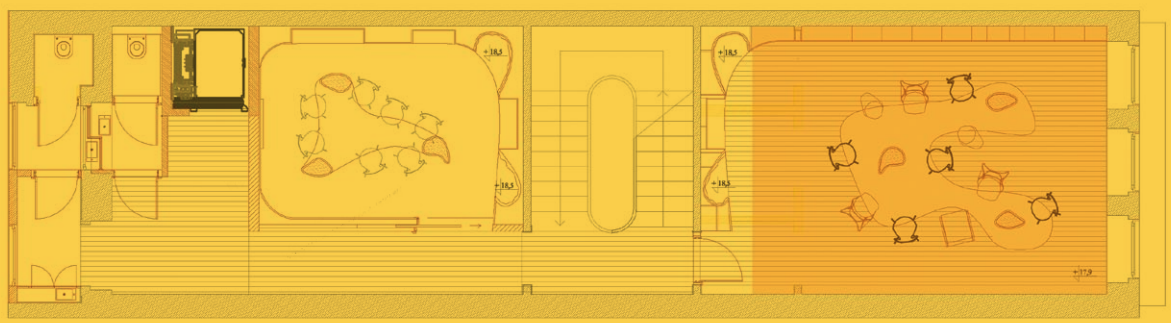
120. Fourth floor - drawings of the build and demolished walls / colour proposal



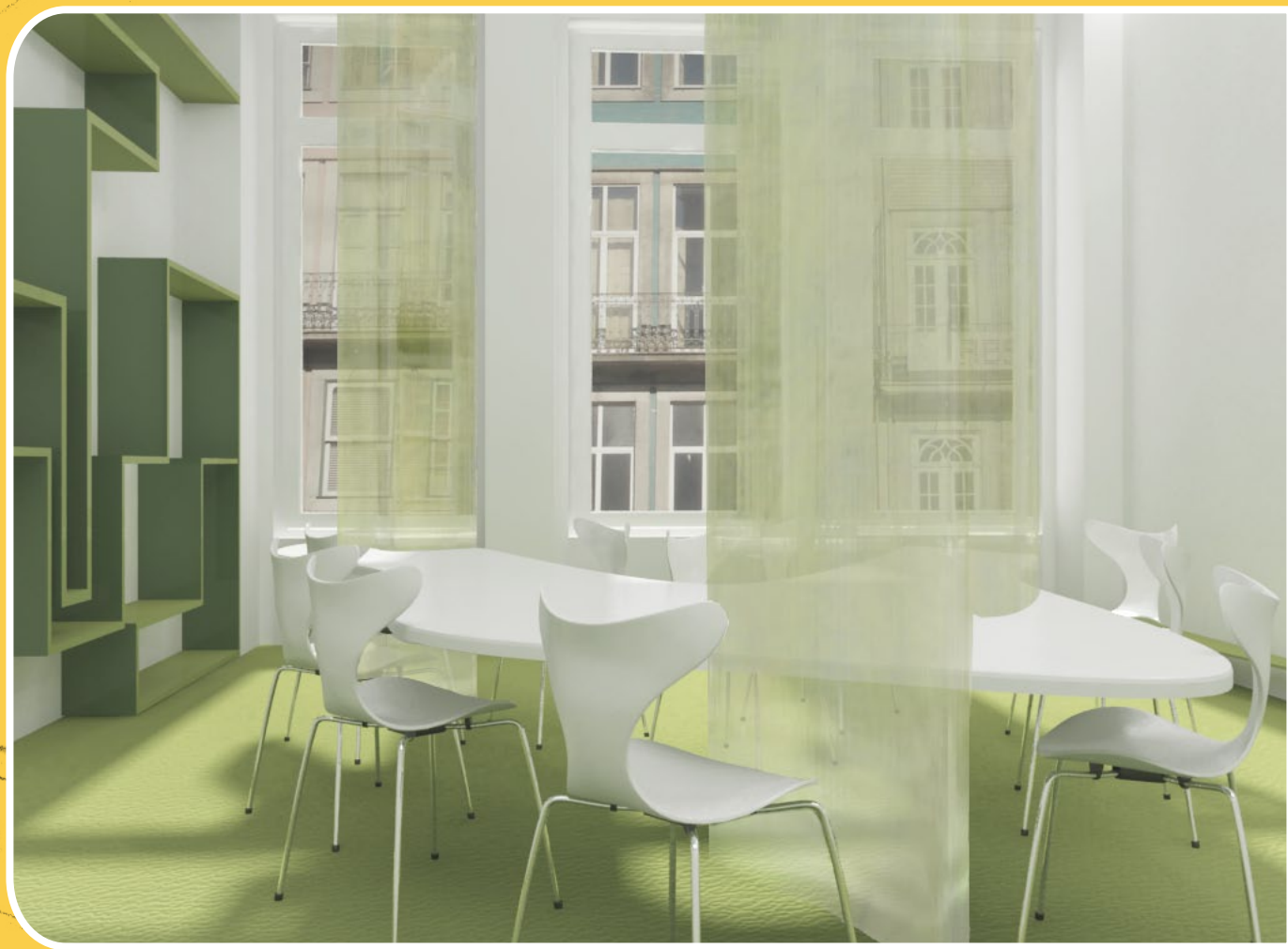


Sketches



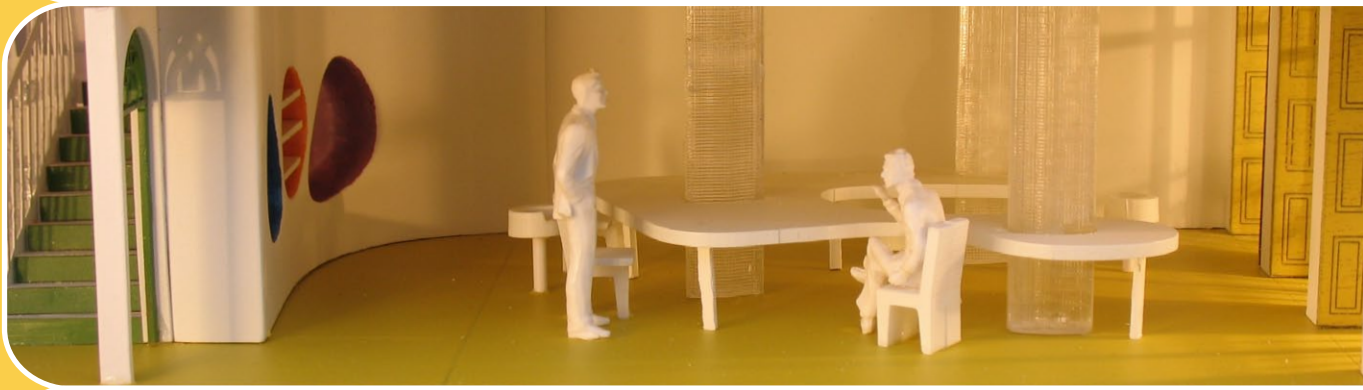


121. the plan of the fourth floor



122. the conceptual sketches of the language class

The maquet of the fourth floor



123. the corridor of the fourth floor with the view on the teachers room
124. / 125. the language classroom

The fifth floor: kindergarden – urban garden

"Claraboia", the window in the roof that introduces natural light inside of the building, visually divides the building into two parts. One, on the right, is a place for fun, movement, joy. The other, on the left, functions as an urban garden, where children can grow plants, meanwhile learning responsibility, ecological thinking and sustainability. The inner parts of the windows have been transformed into "observatory points" from which children can explore the panorama of the city. The wall is prepared for writing, drawing and expression.

The middle part under the "claraboia" is covered with a carpet which imitates grass. New steel construction supports the opening and also creates the frames that divide the space. The frames are filled with rotating horizontal and color-glass panels. The right part of the floor is space for fun where children can listen to music, stories and to each other while resting in the "audio niches". They are supplied with "urban ears", a sound system that allows children to listen to recordings while being surrounded inside the niches. The inner part is designed with organic, smooth shapes and filled with the memory foam so children may choose the most suitable position for them. The chosen material: higher-density memory foam reacts to body heat, allowing it to mold into the shape of a warm human body in a few minutes. A lower-density memory foam is pressure-sensitive and molds quickly into the shape of a body.

Walls and floor are finished with sustainable eucalyptus wood [21] panels that are colored in some parts to indicate entrances to the niches. The floor level "rises" towards the window niches. The vertical communication– staircase on all the levels is painted white,

[21] Eucalyptus is a fast growing tree: it grows at least twice as fast as species like pine, oak or cherry. Floor made from wood harvested from fast growing and sustainable sources is an environmentally-responsible choice. Eucalyptus floors can be such a choice, as long as the wood is harvested in sustainable eucalyptus forests., http://www.house-energy.com/Floors/Eucalyptus.htm

including the pedestal, crash barriers, stairs and walls. The head part of the stairs is painted the color of the “welcoming” level. For example, if we are in the “red” level and want to go to the “blue” one, the head part of the staircase in between will be painted blue The main actor in this level is the “claraboia” that provides the spectacle of light and shadow. In the middle of the stairs are suspended chandeliers made of bowed glass with low voltage LED lamps made by Bocci.I wanted to retain respect for historic elements of the building and refresh as many of them as possible. The roof cover of the building has a wooden, ruined construction that needs to be refreshed and dried. To introduce more light into the building I added the extra opening, which I called “the wings of a butterfly” and located them in between the rafters. The highest point of the “wing”, the surface, is always covered with brick while the side parts are glass. The additional openings are not entirely glass because of the intense sun, but partly covered with brick identically to the original roof. Those openings that are lying on the axis of the “claraboia” follow its rule and are filled with glass in a steel frame.

Space division	Area
Kindergarden	40 m/2
Communication	16 m/2
Urban garden	32 m/2
Auxiliary room, storage	2,6 m/2
Total	115 m/2

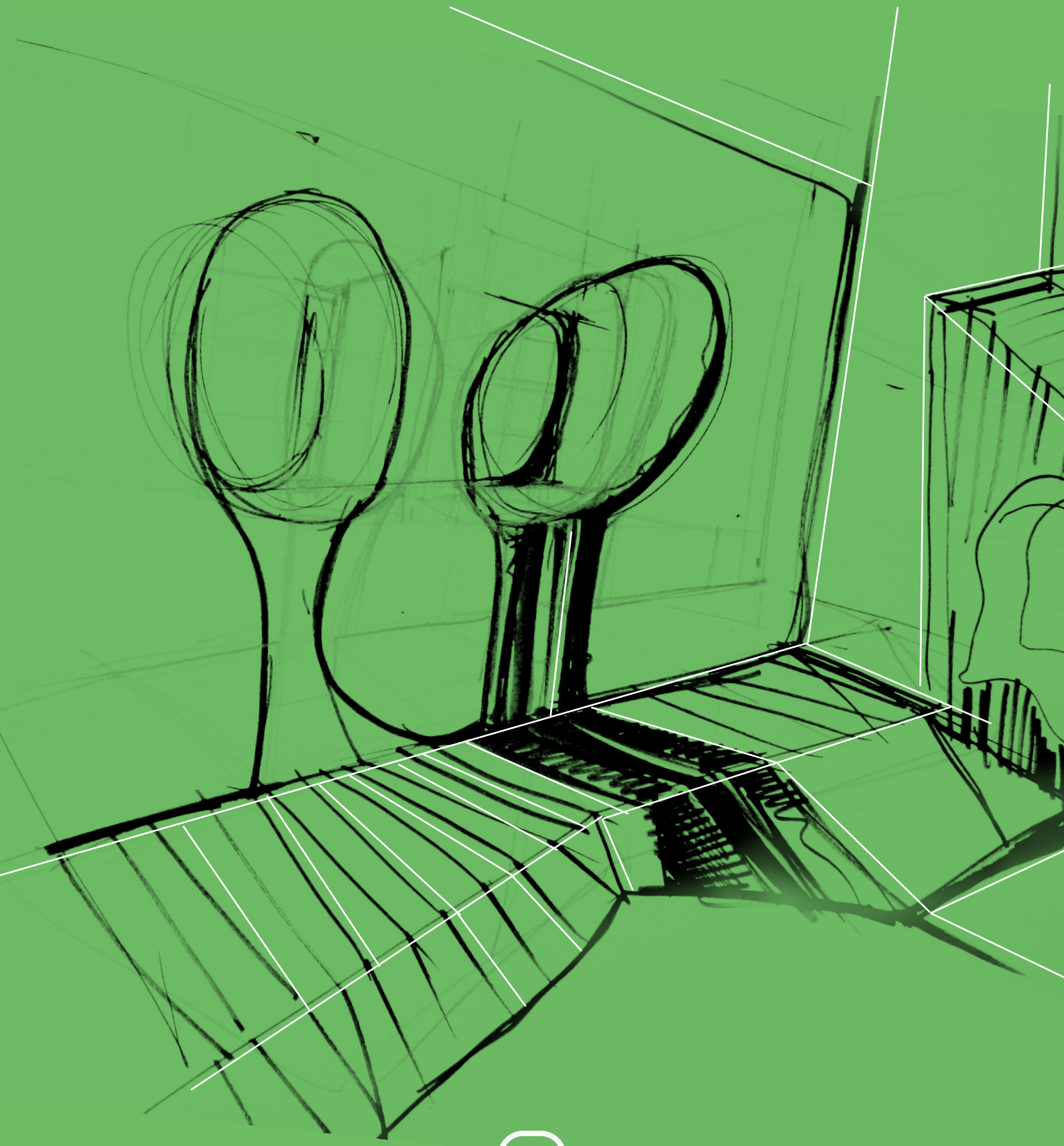
Inspirations

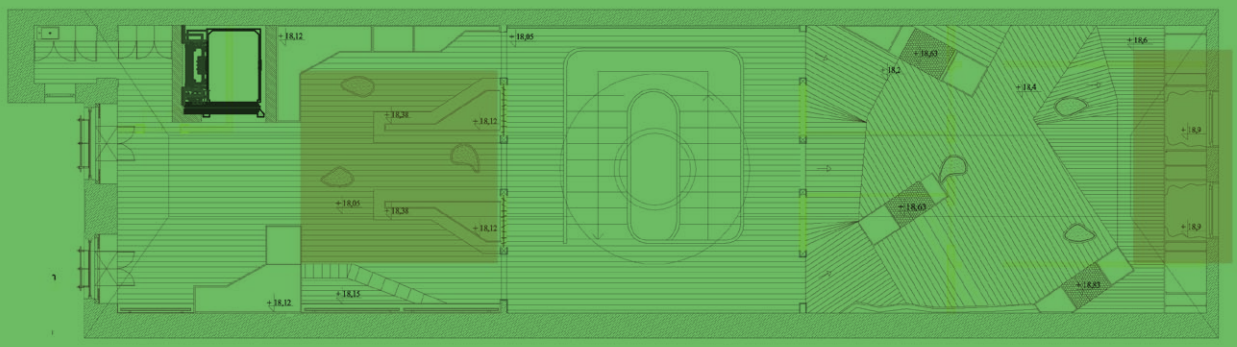
126. / 127. / 128. / Taka Tuka Land, the kindergarden in Berlin

129. Taka Tuka Land, the kindergarden in Berlin

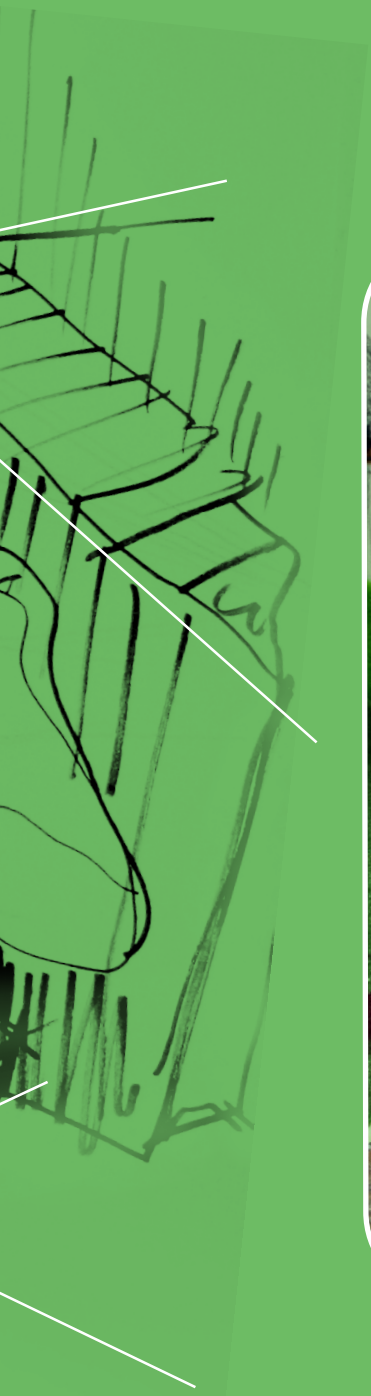
130. Fifth floor - drawings of the build and demolished walls / colour proposal

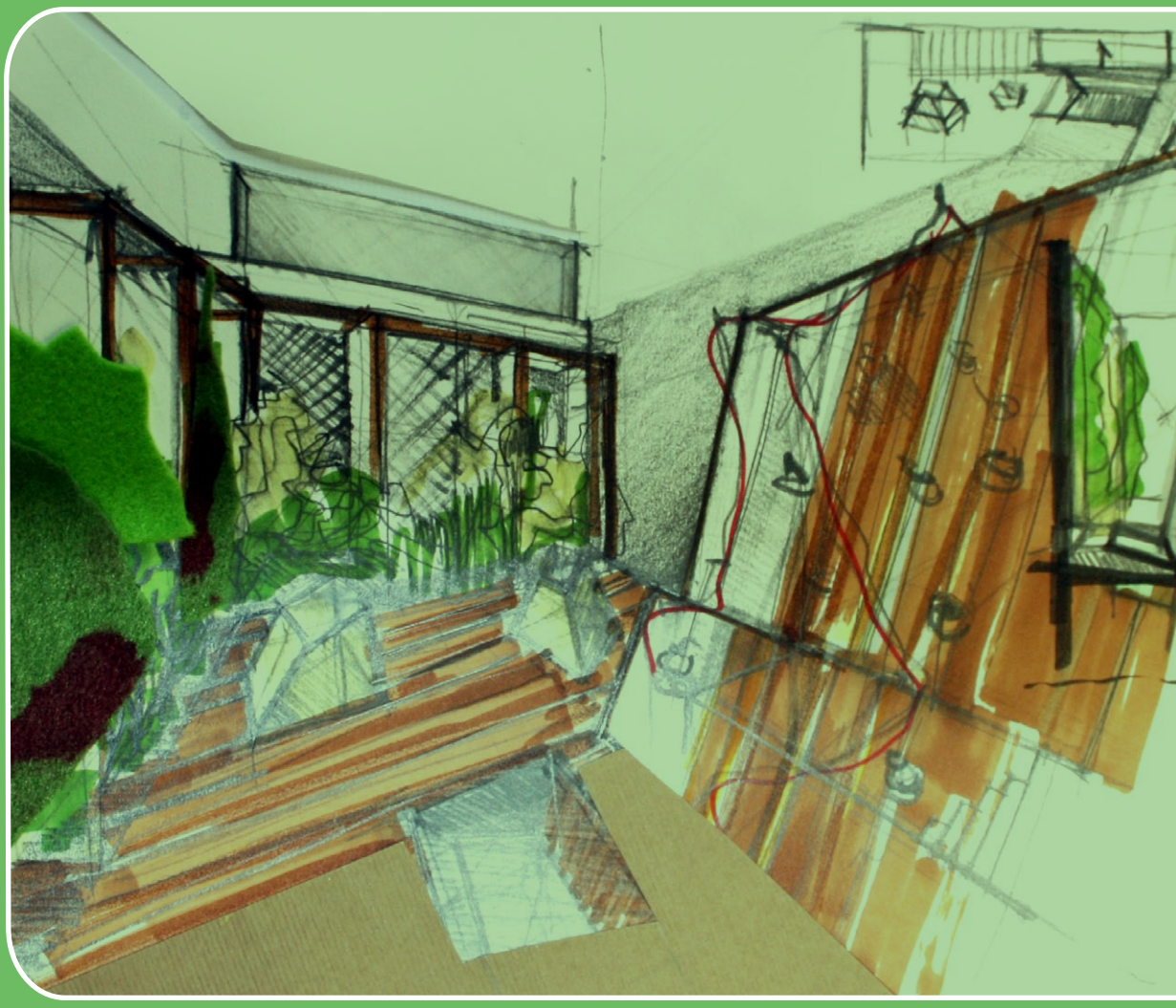
Sketches



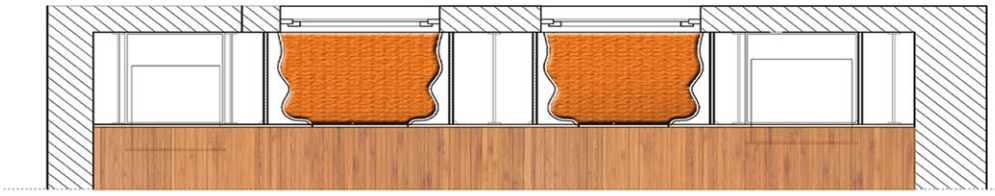


131. the plan of the fifth floor

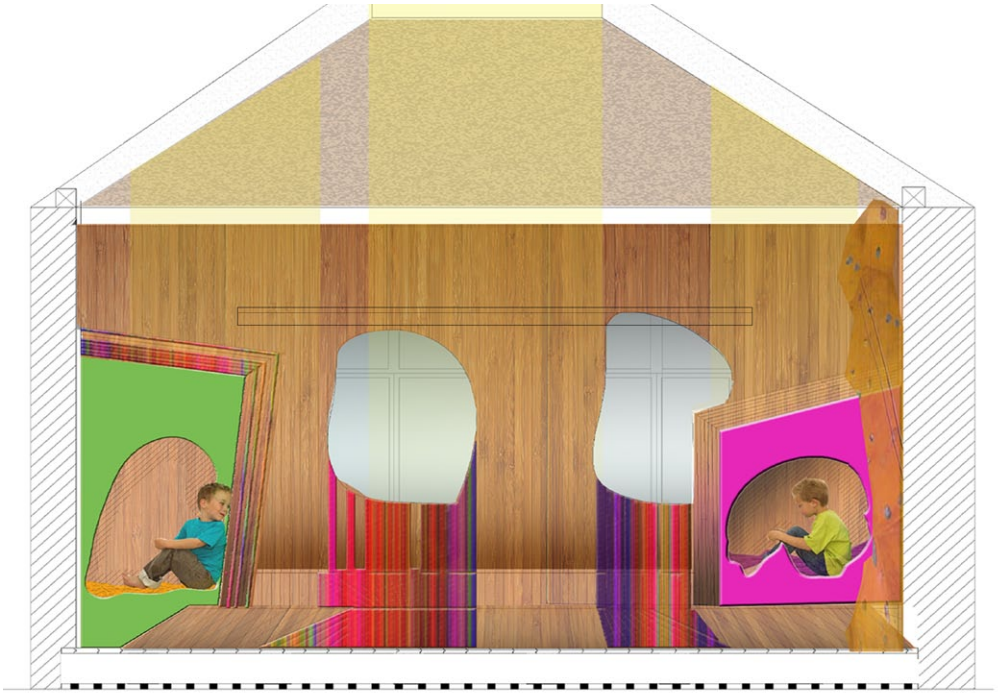




132. sketches of the first concepts



the view of the window’s niches

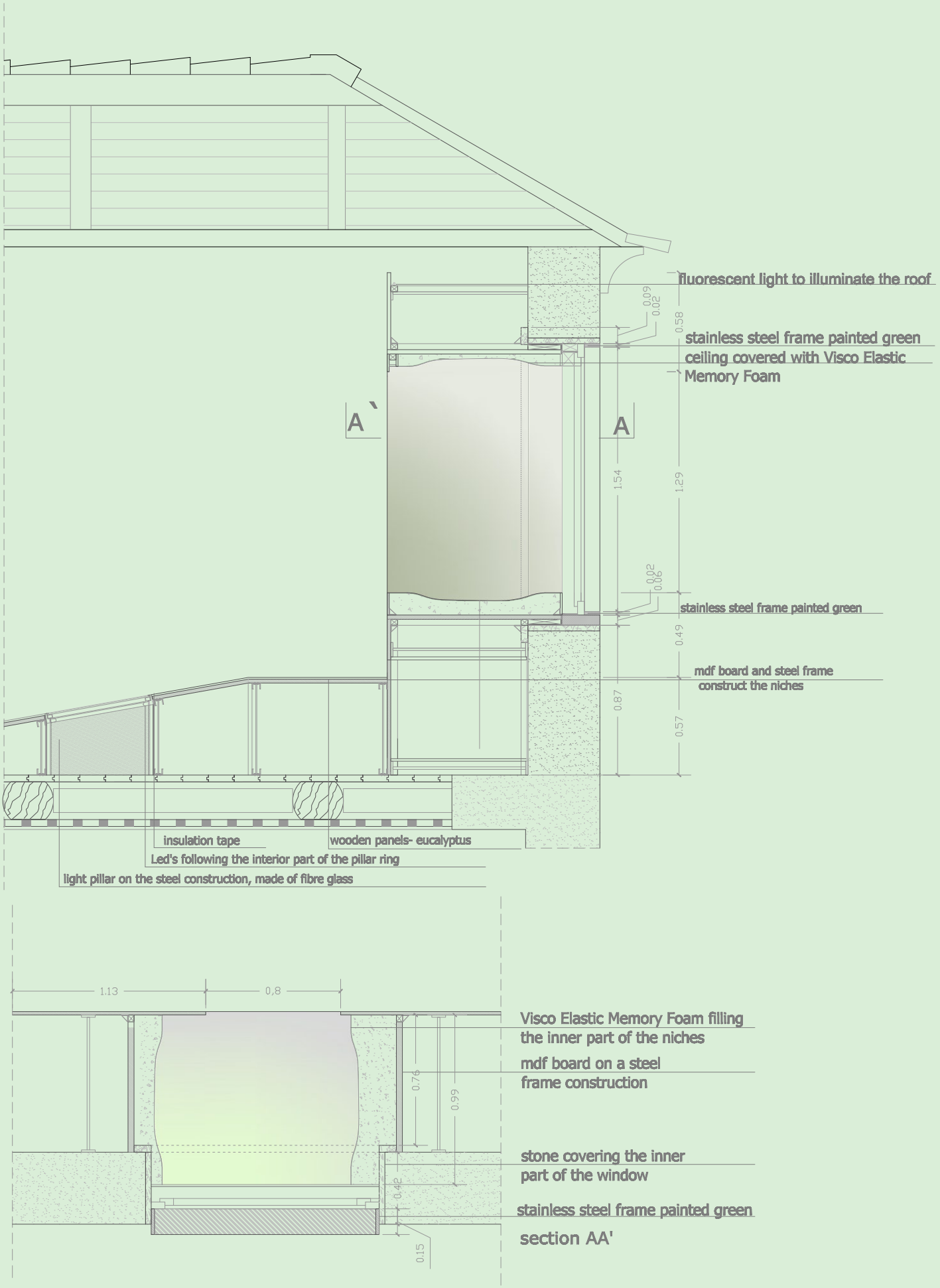


the playground with the climbing wall

the interactive and window niches

The maquet of the fifth floor

133. the kindergarden- the zone for play / 134. the central part of the floor under the "claraboia" / 135. urban garden with the observatory



136. the detail of the windows niches at the fifth floor

Conclusion

To summarize, in my studies I was trying to investigate children's perception of a space and the way they organize the world that surrounds them. I wanted to stress the necessity of architecture education at the beginning of the young's men personality and importance of design educational spaces for children.

I focused on the idea of architectural education for children, stressing its importance in the process of developing, and viewing it as education leading to the formation of conscious, open-minded and creative society. Encouraging children to interaction with the surroundings, teaching them to pay attention to the comfort of their closest community, such as home or school, making a good habit out of acting and thinking about sustainability during after-school activities may result in educated and happy people now and in the future.

The project of "The Interactive School for Children" is about the symbiosis of space, its function and its inhabitants, about the dialogue between architectural history of the building and its new design. It aims to create a place that will "breathe" together with children, will become a platform where inspiration meets motivation and curiosity evokes creativity in an international ambient. The place will teach the importance of heritage, architectural history, it will transmit sustainable model of life and ecological lifestyle. The symbolism of color, the mediatory character of space, the interaction between architecture, light, color and sound will invite youth to a pleasant lesson of life and fun. Teaching places should be incubators of new ideas. Brain storms with children, as they transmit information, teach about architectural codes of symbols, structures, colors, temperature, have an important role on a growing person.

Hopefully, more educational centers of this character – ones that will let children feel and observe the world from a different perspective, open the doors to the imagination and teach the language of modern live – will be created. Care should be taken of educational spaces for children to make them inspiring, open to interaction with their inhabitants and, above all, safe, friendly and aesthetic. It is up to adults who should take care of a better conditions of the places where their children are growing, experimenting the world, making new relationships. Architects should participate with children in the design process to define proper spaces that children need and discover the best spacial organization. Then they will be able to build educational playgrounds, urban gardens out of sustainable materials and technology to show children the path that the modern world should follow.

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graphic design: Alicja Czerniawska
alicjush@interia.pl