

***“Understanding by doing”: experiences of architecture with children.***

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*This contribution represents the attestation and the foundation of the experience we made and of the educational path conceived by the association of three women and architects. The project aims to educating children to architecture intervening inside and beyond schools, thanks to a series of laboratories realized with children of the City of Naples<sup>1</sup>.*

### **Introduction: the architectural experience.**



Architecture uses a three-dimensional vocabulary which includes man<sup>2</sup>: it is a necessity, a shelter, a picture of historical and real life. *“As a construction of real space, it is “a potential incentive to movement: a building is a spur to action, the stage for movement” (R.J. Yuddell, 1977)<sup>3</sup>.*

We look at and listen to the world with our entire body: this is the way we explore architecture and the spaces it creates. Our body is the unit of measure. Thanks to it we modify and enliven space: this (real or imaginary) opportunity to act differentiates architecture from other forms of art.

Architecture<sup>4</sup> is created by man and for man. It is the only form of art, together with dance, in which

our body takes part to the work of art itself. It creates spaces, it modifies the place in which it takes root and confers significance. Man gains experience from all this process. When architecture is intended also as experience and not only knowledge, it wields its entire potential and its merit.

Moreover, since it influences our common heritage and the collective idea rooted into culture and time and producing spaces and *events*, it also defines an area of social practice.(Tschumi, 1996).

Nonetheless, despite the fact we live into architecture and we experience it constantly, we are often not aware of places and spaces in which we live and habitually move.

All this applies also and even more to children, who, since early childhood, get to know the world through their body, using it to explore space <sup>5</sup>.

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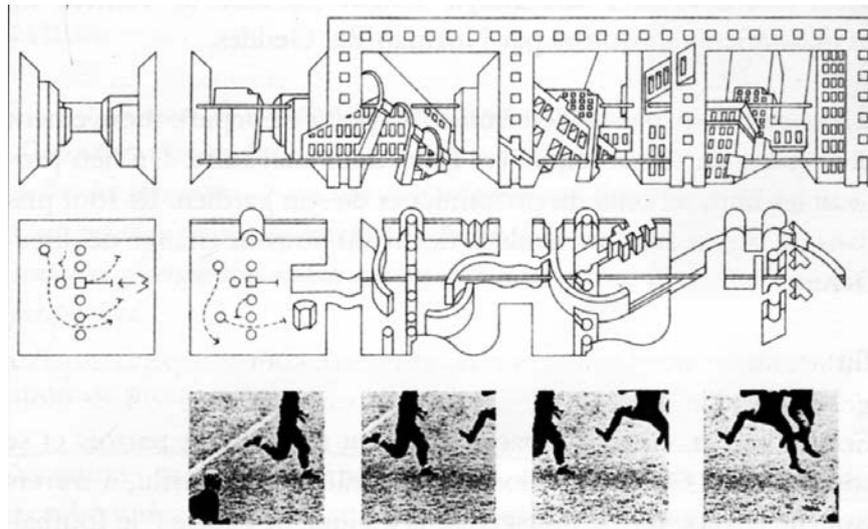
<sup>1</sup> Archipicchia-Architettura per Bambini is an association, which since its very beginning has been worked with children in order to promote the study of architecture and participated urban planning. Our cultural aim is spreading the importance (also didactic and educational) of architecture and urban heritage and promoting knowledge and enhancement of the historical, artistic and especially architectonic heritage, considered as central elements of culture.

<sup>2</sup> "Painting uses two dimensions, even if it can suggest three or four. Sculpture uses three dimension but man remains outside, separated from it, looking at these three dimensions from an external point of view. Architecture instead is like a huge sculpture, inside of which man can enter and move". Zevi, B. (1948), *Saper Vedere l'Architettura*, Torino, Einaudi, pp.21-33.

<sup>3</sup> Yudell, R.J. (1977) "Il movimento del corpo". In Bloomer, Kent C. e Moore, C.W., "Corpo, memoria, architettura." (Firenze, Sansoni Editore).

<sup>4</sup> Le Corbusier, "Should I teach you architecture? That's a difficult question...", Casabella, 2008/766.

<sup>5</sup> "Babies learn to walk to reach the mother, learn to speak in order to obtain from the mother the objects of which their



### **The importance of space in the learning process.**

The importance of space in the learning process is largely disregarded, in Italy at least.

Educational offer into schools - with few exceptions<sup>6</sup> which follows educational theories of the beginning of the century - mostly ignores the importance of using space into the learning process of the baby. Among these exceptions, we want to mention the inputs given by Freinet's method and Reggio Emilia Approach regarding the experience of space. In Freinet's proposal, called "*metodo naturale*" ("natural method") children learn depending on their experience of the world: the body is the main instrument of knowledge, leading even the acquisition of mathematical and geometrical concepts, through the measurement of space with rhythm and dance.

Also the exceptional experience of Reggio Emilia, from which it was elaborated a method in the United States (known as Reggio Emilia Approach), considers space as a fundamental educational value which should be always included into educational process. Malaguzzi defines "space" as a "third teacher" and the work of educators is based on a socio-constructivist theory of learning: "the organization of space into their school is realized in compliance to this theoretic perspective. Structures, materials and the appealing way in which they are proposed to children are an invitation to explore the surrounding space<sup>7</sup>.

Our work on education of children to architecture is based upon these reflections, integrating them into an educational process focused on architecture and its materials. In our opinion, working with children, stimulating their understanding of architecture and their design thinking is a crucial choice in education. Giving children the opportunity to approach architecture during their formation is a fundamental educational and didactic occasion, since it involves many fields of knowledge (science, art, technology, sociology, mathematics, design...) and guards the traces of the past impressed on materials. Those traces and shapes represent historical visions of the past (memory

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world is made. Babies learn a movement or a language because they are stimulated by a necessity of the body, not because they intend to put in place a mental representation. (...) Babies learn a movement when the body has included it, that is to say when it has been assimilated to their own world". U. Galimberti (2005), *Il Corpo*, Milano, Feltrinelli, p.125

<sup>6</sup> For further information, see Freinet's and Steiner's educational theories, as well as the Montessori method in Italy and the experience of Reggio Emilia (Italy) based on Malaguzzi's work.

<sup>7</sup> C. Edwards, L. Gandini, G. Forman (edited by) 1995, "I cento linguaggi dei bambini" (Torino, Edizioni Junior).



and culture).

Our thesis is that educating to architecture will allow people to regain the spaces of everyday life and to imagine a new dimension of living.

This is an area of education which enables a wide range of projects, experiences and possible transformations both of reality and of languages used to describe it, introducing a different experience of space.

### **Method: How to introduce children to architecture**

Based on our experience, the most appropriate space for this kind of "work" is the laboratory, considered as a space for research and experimentation, in which children "shape their experience" (Loris Malaguzzi, 1995) and play a central role in the creation process.

The laboratory is the space dedicated to "developing the ability of observing both with the eyes and the hands, in order to learn observing reality with the five senses" (B. Munari).

Bringing into architectural field the experience of Bruno Munari's famous laboratories "Playing with art"<sup>8</sup>, which constitute a still valid approach based on the principle "learning by doing", we work in two ways: with interactive narrations and with manual laboratories.

In the narrative phase, architectural notions are conveyed in a reciprocal exchange which puts into motion imagination and past experiences both of the child and of the operator.

A careful language simplification is obviously essential: it allows to deal with architectural matters without manipulating content. Therefore, the specific architectural theme is clarified on the linguistic level, in order to assign a real meaning to "abstract" concepts such as heritage, protection, environmental sustainability, history among the others and including them into each one's daily practices.

The phase dedicated to manual activities, instead, is the moment in which children can experience

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<sup>8</sup> The first "Playing with art" laboratory represented an historic event at the Pinacoteca di Brera. In 1977 Bruno Munari was offered the assignment of designing a space for children. This represented a concrete response to Brera Superintendent Franco Russoli's challenging request, asking to transform the museum from "ivory tower and sacred place for few elects" into a "living organism", capable of turning into "mean of public communication" and "social service". The laboratory was set up within an exhibition named "Process for the museum" and this experience spread during the following 20 years into different realities, such as private laboratories, laboratories within museums, refresher courses, both in Italy and abroad.

"Playing with art" represents an alternative and still valid approach to art into museums, based on the principles of "understanding by doing" or "learning by doing", through direct experimentation and the rules and techniques of visual art.

space, both through activities with their body (measuring distances, rejecting objects, entering spaces of different dimensions and building "architectures" fit for themselves) and through the realization of three-dimensional objects on appropriate scale, thanks to which they can set the scene of their own spatial perspective.

Both narration and manual activities are obviously presented as a game.

While playing, the construction of spaces simulating real ones allows children to face external world and to reflect upon architectural objects they have seen or places they have visited or been told, solving the mystery of previously impenetrable spaces.

After all, playing is of the utmost importance in children's learning process and in their daily life, so that it is recognized as fundamental right also by the Convention on the Rights of the Child.

We work in several environments, both inside and beyond schools, dealing with architectural themes in order to give children critical instruments to get to "own" the world that surrounds them.



In schools, we are included into curricular courses with seminar-like meetings in synergy with the ongoing educational programme. As an alternative, we also organize extra-curricular laboratories in addition to regular school time. Outside schools, we work into private structures with children between 5 and 10 years of age. The open laboratories are organized in significant architectures and urban places, chosen because of their relation with the history of the city or because of their historic-artistic value.

Our learning objectives can be summarized as indicated below:

- to develop perception and knowledge of their own city;

- to creatively re-elaborate images of architectures of the city acquired during the laboratory in order to promote their critical visual reading;
- to encourage children to describe the spaces they live in, in order to imagine shapes and spaces closer to their desires;
- to exhort children to make connections between history of architecture and spaces they have lived in;
- to exhort collaboration among participants;
- to legitimize and support diversity of what produced;
- to develop manual skills and to stimulate imagination thanks to the creation of original works of art upon a chosen theme (plastic models, drawings).

### **Laboratories: the experiences with children.**

In this section we intend to speak about the laboratory experiences realized by the Association, to show how children approach the themes proposed through images of the exercises.

Most of the times young architects experiment how to build a three-dimensional space thanks to small plastic models which make tangible the imaginary world of the stories, fables, myths together with the real world of the city they live in and the environment in which children set their own experiences, both real or imaginary.

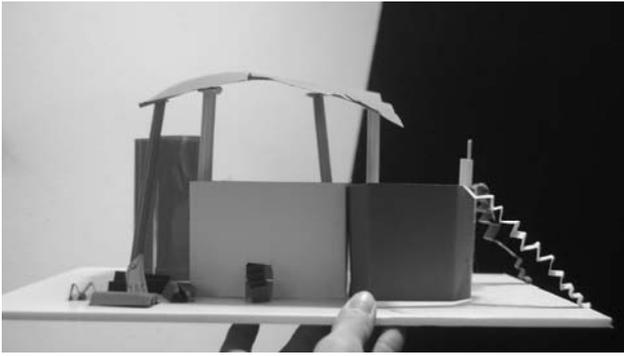
The theme of each laboratory focuses on specific architectural objects and places (materials, techniques, composition, history), but also on the personal experiences of the children, that are linked to the way they perceive space.

#### *1. The Home of my dreams.*

Working on the concept of shelter, of inhabiting and consequently on the theme of the home and its parts, children are stimulated to be aware not only of their immediate surroundings, but also of themselves and their relations to the world.

*"Our home is our corner of the world, our first universe".* G. Bachelard in his work *"La poétique de l'espace"* (The Poetics of Space) (1957) identifies home with everything which is shelter and stability, a safe place and a refuge of the self.

Young architects were exhorted to "re-build" their shelter and were stimulated about their desires, in order to identify which were the ideal space in which they wanted to live, what they needed and how to realize this space. Starting from this imaginary desire (a moving home, a colourful home, a home in Paris, a perfumed home, etc.), they shaped their own home, using "architectural materials" (walls, windows, pillars, attics, stairs).



## 2. *To my height.*

*"We use eyes to observe. (...) Crossing our eyes we can see the tip of our nose, raising them we can see up, lowering them we can see down; rotating our head in a direction or the other we can see all the things around us. But we need to rotate all the body to see properly what is behind us. Our sight passes on space and gives us the illusion of relief and distance. This is the way we build space: top and bottom, right and left, front and back, near and distant."* (G. Perec, (1989) *Specie di spazi*, Torino, Bollati-Boringhieri, p. 97).

The theme of the laboratory was inspired by the *Modulor* by Le Corbusier (1948): architectural space is measured on man, but what happens when it is a child the unit of measure of an inhabited place?

This exercise spurs children to measure space in which they usually live (a space built for adults), increasing awareness of the difference between a space thought for their height and a space thought for someone taller than a child. This difference is never taken into consideration, but it actually exists and is experienced by children everyday.

Children were asked to walk around their house, focusing only on objects, paintings, rooms and passages they were able to find at their eye level. They reported this itinerary with their parents' help with a short video, from which they also wrote and draw the report of what they filmed.

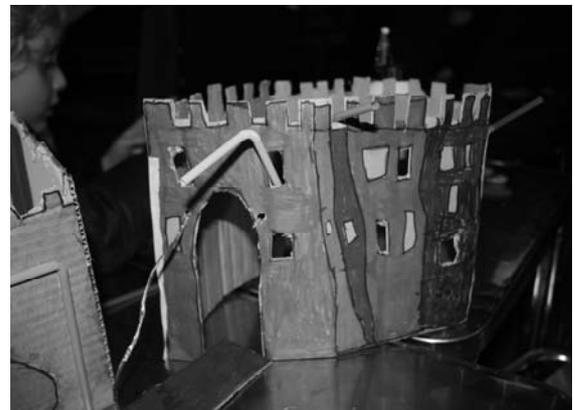
## 3. *Naples, hands over the city.*

Within the laboratory "Naples\_Hands over the city" we focused on the city of Naples. Working on their own city, learning its history through its buildings, the urban stratification and all the related myths are all activities whose aim is creating an attachment to the city (intended as a complex entity and observed from several points of view), in order to make it become their "own" city, a body to be communicated and shared.

The city was divided into several parts and described by means of its constituents, its "primary" elements. The focus of the first meeting of this laboratory has been on buildings, as representative of the "private" component of the city in opposition to public buildings. Focusing on lesser known stories about Naples (for ex. myths and stories unknown to 5 to 7 years-old children), we tried to underline the characteristics of a typical Neapolitan historical building. We described facades,

colours, staircases (a very typical element into Neapolitan buildings, especially from the late Baroque period) in order to manually realize a little chest with the facade of the building on the top, with windows-eyes and doors-mouth, and inside a San Felice style staircase.

Castles were the second theme of this series of meeting about Naples. The city has several castles, dating back to the different dominations it experienced. Castles are some of the "special" elements of a city. In particular, we studied the history, the elements, the myths and the construction of Neapolitan Castles, learning all the basics to make a small castle-lamp. In the end, we focused on squares, public spaces, all the empty spaces: squares, widenings, pedamentinas, streets, alleys, etc. The manual exercise regarding open public spaces consisted in the construction of a "Spring Obelisk", after having observed the obelisks and the spires of the city and their role into urban design.



#### 4. *Searching for invisible cities.*

Starting from the reading of the book "Le città invisibili" (The invisible cities) by Italo Calvino, we used the literary text to deal with specific themes relative to the contemporary city. This work was regarded as the attempt of giving a three-dimensional "depth" to the book. Like many little Kubla Kan, children listened with their eyes shut to the fantastic story of Marco Polo. Inspired by this suggestive story, they worked in team or individually to build some of the invisible cities. From time to time, we spoke about the themes Calvino imagined into his visions, disguised in a surreal story but referring to actual and real urban themes. For this reason, we selected some of the cities

described in the book, coupled them and tried to identify common features, which embodied important architectural and urban issues. During the first meeting, we dealt with the "spider web cities" (Ottavia and Ersilia), which were chosen to discuss the themes of lightness and balance. The team work led to the realization of a suggestive spider web, made of strings, cords and fabrics, to which children hanged pieces of cities (houses, stairs, schools, museums, trees). Regarding the "thin cities" (Zenobia and Bauci), we tried to address the importance of respecting natural soil. Zenobia and Bauci move away from natural soil, they walk on thin stilts like the paws of a flamingo to avoid compromising natural soil and to preserve it. In this way, children build hanging cities, fully respectful of the delicate balance of nature. In the end, dealing with "water cities" (Smeraldina and Armilla) gave us the chance to speak about the many flows of things and people which cross cities, building a fantastic city containing the buildings made by the children all linked together by a water flow.



**Conclusions.** Our experiences represent the will of children to express themselves: thanks to little plastic models, manual activities in team or simply speaking, children expressed their vision of the world, which is often different from the vision of an adult. While narrating, each child grew the awareness of the world surrounding him/her, gained confidence in his/her abilities and factually imagined to transform the surrounding environment, leaving a trace of his/her passage. They generated a transformation.

In our opinion, working with children can lead to a general changing process. We are forced to modify our way of looking at things, encouraged by their visions, and we can imagine a new way of inhabiting space.

Giving voice to children's creativity, to their needs and desires give us the opportunity to put in contact again our reality with beauty. Therefore we can imagine *"a city for children, in which the child gives an hand to the adult, guiding him in an imaginary world: the fact they are full of wonder is essential for adult people"* (R. Dalisi).

## References of images

Img 1 – Eliot Elisofon, *Marcel Duchamp descends staircase*, 1952.

Img 2– Bernard Tschumi, *Part 4: The Block*, from *The Manhattan Transcripts*, 1981.

Img 3 – Hermann Hertzberger, *Apollo Montessori School Amsterdam*, 1983.

Img 4 – Riccardo Dalisi, *Childrens playng at Rione Traiano (Naples)*, 1975.

Img 5 to 11 – Works made by childrens during the workshops held by Archipicchia-Architettura per Bambini in Naples.

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Their research and professional activities is concentrated in projects and competitions, which have become the subject of publications and exhibitions. They founded **Archipicchia\_Architettura per Bambini**, a cultural association engaged since its birth in an activity involving children in the study of architecture and participative planning. The objective is to spread the value, teaching and training, associated to architecture and urban heritage. They held workshops with children in schools or in private structures promoting knowledge and enhancement of the historical, artistic and especially architectonic heritage, considered as central elements of culture.