

## A New Architecture for A New School

Waldorf Education in Turkey

By Aisha Melodie Hassan - Architect

If we try to picture a typical primary school in Turkey, an image of a flat roofed concrete rectangular block, (painted in that infamous public school pink) punched with square windows, surrounded by an asphalt playground appears in our minds. These schools look completely identical to one another – no matter what particular region of Turkey they are in, no matter what climate or culture they belong to. They all follow a very rigid geometry and express, what was in the 1940's, 50's and 60's, a nation's effort of renewal and a desire to unite the entire country through the repetition of one single architectural style – Modernism. This new style was derived from the technological advancements of structural materials such as iron, steel and concrete in the industrial revolution. It expressed an ideology that rejected the excessive ornamentation (*décor*) in pre-industrial buildings and embraced, what was then believed to be, the more 'honest' expression of pure structure and bare essentials. Paralleling the famous words of the modernist architect Le Corbusier; "*the house is a machine for living in*"; you could say that in Turkey's modern era, the school building was made as a 'machine for learning in.'



Another reason why these school buildings look the same is because they need-ed to be constructed quickly, cheaply and implemented in hundreds of towns and cities across Turkey within a short time period. But, their box-like basic and repetitive form reflects an industrial architecture that fails to interact with its particular social, cultural and climactic environment. In other words, it rejects its external context. This rejection results in a soulless factory-like institution that is closed off from the outside world, which in turn causes a trapping in of the internal environment. What is most often taught in the internal environment is just as lifeless, repetitive and monotone as the forms of the architecture itself. Like the identical box-shaped school buildings, children are being education to be the same, to fit a certain desired social standard and because of this, the quality of education is suffering. Less exploration more standardization, less critical thinking more right or wrong answers, less creativity more memorization, less individuality more homogeneity. As the famous sociologist Jane Jacobs once said: "*We are patenting students instead of educating them*". When a school building creates absolutely no dialogue with its interior and exterior worlds and possesses rigid lifeless forms, it cannot engage with the individual soul of the child and, therefore cannot contribute in a positive sense, to the physical, emotional, intellectual and spiritual development of humanity.

We have to ask ourselves, are the brutal and rigid architectural forms of these typical schools providing the right environment for our children? What if our schools were more alive? What if they responded to the environments of a particular place and culture? What if our schools ignited the child's soul, creativity and imagination? What if our schools became vessels that uplifted the spirit and human awareness of each child? What if architecture could possess the right forms, the right spaces and the right colors for the personal growth of the child?

If we were to erase that image of that typical concrete box school from our minds; in a sense start all over again; and begin to design a school that is sensitive to the human development of the child, we would most likely begin to imagine something very different. Perhaps it would be a building with a lot more life and color, with a variety of spaces and forms that respond to the inside and outside world, a place where the child takes pleasure in playing and learning in, a place that feels more human and whole.



There are many examples of schools that have been designed with 'human awareness'[1]. The Waldorf Schools in particular, have been successful in achieving the goal of creating the right environment for the human development of the child through a more human, holistic and organic architecture. These schools can be found all around the world and are increasing in number in all shapes and sizes, with very different but sensitive responses to their own climactic and cultural contexts. For example, the Sekem Waldorf School in Egypt initiated by the award winning Dr. Ibrahim Abouleish, in the Rudolf Steiner Seminary in Jarna (Sweden) designed by Erik Assmussen, the Toronto Waldorf School in Canada etc. As a reactionary force against the typical factory-like school buildings that deaden the human spirit, the Waldorf schools are designed to truly encourage the individuality, creativity and human awareness of each child. The first Waldorf school was founded in 1919 to serve the children of the employees at the Waldorf-Astoria cigarette factory in Stuttgart, Germany. The architecture of the schools embody what Steiner believed to be the necessary architecture for humanity and the new age.)[2] Each Waldorf school has its own way of expressing an organic and holistic architecture but apply a series of common principles, developed by Rudolf Steiner and followers of the Anthroposophic movement, for the design and construction of an architecture that is truly aware of our humanity[3].

The common principles are as follows:

1. Form Follows Function
2. Formative Forces
3. Metamorphosis

4. Polarities
5. Colour
6. A Collaborative Design Process
7. Sustainable Architecture – Response to Site, Climate and Culture
8. Humour in Architecture
9. Imagination of the Architect and Child

### **Form Follows Function**



In order to create a school that is aware of our humanity, its architecture should be affected by its external surroundings as well as their internal functions or activities. What is going on inside the building (its function) should influence the formation of the spaces, elements and volumes of the building. In other words, we want the building to speak to us by giving us a feeling, through a variety of forms, of what is going on inside its walls. Unlike the modernist approach of completely exposing the structure and interior spaces of the building (the interior being the complete inverse of the exterior), architecture that is human can still remain somewhat mysterious by concealing certain interior aspects of the building from the exterior facade. Exactly like the human being himself! The outer appearance of the human being can be quite different from his or her inner character but these differences do not affect the integrity of his or her whole being. In his lecture given on December 12th 1911, Rudolf Steiner describes the interior quality of a new architecture: *“This interior will be enclosed and yet open to infinitudes of spirit, though not by means of windows but by its very shape and form.”*<sup>[1]</sup> and *“...we must try to create an interior space which, in the effects produced by its colors, forms and other features, is a place set apart – but not shut off, for wherever we look our eyes and our hearts should be invited to penetrate through its walls.”*<sup>[2]</sup> In this age, schools are looking like any other building; like an office building, like a factory building, like a hospital building. When one sees the façade of this typical box-like school, it is hard to tell what kind of human activity is going on

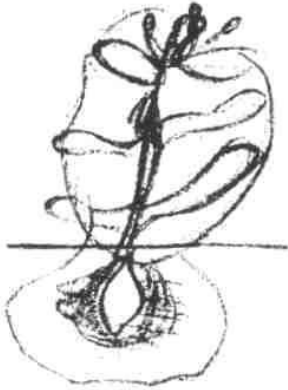
inside. Where are the toddlers, 7 year olds or teenagers located in the building? Where is the central gathering and auditorium space? Where is the main entrance or central stair? Where is the play garden? Each and everyone one of those particular functions deserve a particular form that expresses their fundamental nature. These forms may have different roles and may take on different shapes in the interior and exterior but in essence the spirit of a school should be felt as a whole. If the school building starts to speak to us through a variety of forms that inform us about the different activities that are going inside, a special dialogue is created between the soul of the human being and the spirit and spaces of the architecture.

## Formative Forces



The architectural forms and spaces are not only affected by their interior and exterior functions but also the forces that are at work in nature. Rudolf Steiner observed that there are many forces in nature that are responsible for the formation of the physical world. He refers to two important spiritual beings named Ahriman, a being of darkness, who tries to pull us down with the force of weight and gravity, (urging us to be practical and materialistic) and Lucifer, a being of light, who pulls us out of our bodies with the force of weightlessness and lightness, (urging us to be dreamers and illusionists).[1] The growth of each animal, flower, rock and tree is affected by these beings or, what Steiner also referred to as 'formative forces'. The aim is to create a balance between these two spiritual forces. Like the image of the whirling dervish with one hand held up in the sky and the other held down towards the ground, the human being embodies this tension between higher and lower worlds. By tuning into these spiritual beings, we can apply them in the creation of spaces and forms in order to achieve an architecture that is in balance between the forces of nature. Once these forces are present in the forms of the school, we can now imagine how they will begin to impact the formation of the child's physical body, soul and spirit. If we, as human beings, are elements of nature, then our physical and spiritual growth must also be affected by these forces![2] If we imagine ourselves as children within a school building with forms that possess too much weight in the material world (or too much Ahriman), we would feel our spiritual development (our ability to be visionaries, dreamers, explorers of the divine) would suffer. If we were within a school with too many weightless forms that pull us to another world (or too much Lucifer), we would feel the need to be more grounded on the earth and in tune with the realities of the physical world (our ability to be practical, observers, scientists etc.) So, when we design a school that is 'aware of its humanity', a balance must be created between the governing forces in nature through forms that express these higher and lower worlds. These forms will be manifested in different ways in the school building according to the particular functions of the building but will all share a common purpose of achieving a balance between the formative forces in the world and thus provide the right forms for the development of the child's soul, body and spirit.

## Metamorphosis



From the day that we are born to the day that we die, us human beings undergo an incredibly complex physical, emotional, intellectual, and spiritual metamorphosis. Like the growth of the simple seed into the complex flower, the architecture of the human being undergoes a series of critical transformative stages (often seen in 7 year stages). In Andrew Beard's introductory note about Rudolf Steiner's lecture on metamorphosis in architecture he writes: *"Metamorphosis is a time process that Goethe[1] saw as the basis of plant morphology, weather patterns and indeed virtually all processes of development and change in the field of life sciences. Steiner extended this research into the field of 'spiritual science' and discovered that the laws of metamorphosis lie behind many phenomena, including the phases of human life, and indeed the entire evolution of the cosmos...If a new architecture is to make spiritual forces visible in matter than the principles of metamorphosis must become one of its central elements. Thus Steiner attempted to introduce a time process into the spatial language of architecture."*[2] The architecture of a new school that is sensitive to the growth and human awareness of the child should somehow express the idea of metamorphosis through its forms and spaces. The building must grow along with the child. And, the child must grow along with the building. Is the room for educating toddlers the same form as a room for 12 year olds? Does the south façade possess the same character as the west? How does the architecture change form and character according to the various functions and responses of the school building? Or is there a grouping of buildings with corresponding functions that embody forms expressing various transformative stages found in nature, such as the simple 'seed like' form or the complex 'flower like' form. This metamorphosis principle works hand-in-hand with the idea of 'Form follows Function' and 'Formative Forces' but tries to weave in the element of time and transformation, which affects the growth in all living beings and in turn, reflects the growth processes of the child.

## Polarities



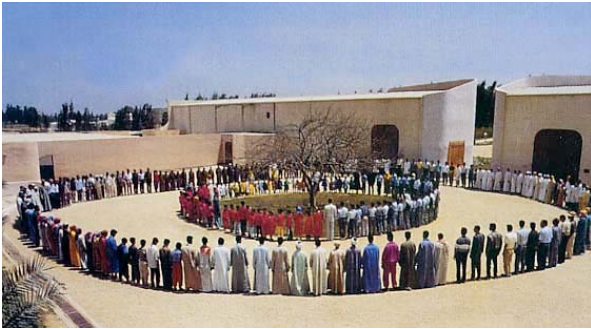
If we were to take a photograph of each stage of the metamorphosis of a plant or a human being, we would observe very different forms and characters. The beginning of the morphological process is the extreme of the end. The seed looks nothing like the fully bloomed flower and yet in essence we can feel that they are part of an indivisible whole. The seed is the polar opposite of the flower as is the newborn baby the polar opposite of the mature woman. If we try to feel what kind of forces are in action to create these changes in a being, we can sense the movements that cause these polar states such as Expansion and Contraction, Concave and Convex, Upwards and Downwards, Outer and Inner, Light vs. Dark, Inhaling and Exhaling etc. Even the extreme characters of children can be described in terms of polarities: miserable vs. sad, shy vs. outgoing, inactive vs. active, dependent vs. independent, introverted vs. extroverted etc. When we translate these polarities into physical forms and spaces we can generate a variety of architectural conditions like enclosed vs. open, solitary vs. social, inviting vs. repelling, unified vs. multiplied, long vs. short, elongated vs. clustered spaces. On the social scale, these polarities can offer a variety of spaces for children with different characters. Polarities can also be expressed down to the very small detail (from the doorway of one side of the building to the other) of the building and likewise, can inform the overall composition of larger scale architectural masses. If the school building that the child is learning in possesses forms that express polarities that are present in nature, then the child's soul or inner human polarities will resonate with those of the architecture.

## Colour



The progression and gradation of colour in the building and individual classrooms is a key element in the design for a Waldorf School. We can all understand the impact that colour makes on an interior space. Some prefer red to blue or green to yellow. The effectiveness and enjoyment of certain colours are dependent on the character of a person but also more importantly how appropriately they are used for specific functions and spaces of the school building. Colour is what speaks to our emotional being, which generates feelings, and sets a mood or tone within architectural spaces. In his lecture given in Dornach on July 5th 1914, Rudolf Steiner describes how colour gives rise to feelings: *"We absorb colours into our being in a spiritual sense, so that blue, for instance becomes the expression of rest, or red, the expression of all that is passionate and fiery. Because we reach out with our ego beyond the flowing sea of colour, it is changed for us into flowing perception or feeling. Here is proof that with regard to colour we float within the cosmos, so that when we see colour, even if it is only the colour of the natural world, we cannot help wanting to have aesthetic feelings about it and applying standards of beauty. This implies that we must learn to grow into colours, to live in them as though in our own element."*[1] Unlike looking at a building's vault or roof structure, which urges our inner geometrician[2] and logic to compute the space, colour carries us beyond the world of logic into the cosmic world of feelings and emotions. Pink, yellow, blue, red, orange, purple. Combinations and layers of colours applied on a surface can also create the effect of light and depth. The 'lazure' painting technique was developed to achieve this quality of light and depth and can be seen in various examples of Anthroposophic architecture (like the Goetheanum[3]) and Waldorf schools. So, what colour is appropriate for toddlers? For 7 year olds? Or, for more mature teenagers? What colour best suits the function of a library, classroom or auditorium? Perhaps a space that is used only temporarily or for special occasions that have a sense of urgency could be red (the classical red carpeted spiral staircase of an opera house come to mind). But a space that requires people to be patient, observant and diligent like a study hall or library might be a light blue. (the sky blue walls of the library, designed by Erik Asmussen for the Steiner Seminar in Jarna, Sweden, comes to mind). And what about colours that belong to a specific region and climate? The exterior facades of traditional architecture from different regions of the world display a range of colours that are rooted in the earth's layers and derived from a clear response to climate. Some dryer regions have high clay deposits so their buildings are made out of burnt orange clay-earth or brick walls. Some use the red pigment of iron oxide to make paints for their facades like the traditional wood villas along the Bosphorus in Istanbul. Others use white coloured stone such as limestone or stucco to reflect the sun's powerful radiation off the surfaces of the building. When the local or natural colour of a region is used, then a stronger sense and feeling for a place will be achieved. The careful and intuitive use of colour is a very important principle for the creation of a holistic and organic school and will awaken the child's emotional being and bring so much life and joy to the child's soul.

## **A Collaborative Design Process**



The Waldorf Schools are being realized through the participation of not only the single architect but of everyone who is involved in the community of making the school such as Artists, Craftsman, Engineers, Dancers, Teachers, Students, Investors. One important aspect of making organic and holistic architecture is that it should be made through a group effort. It is becoming increasingly clear that less self-centered, ego driven work and more strong collaborations between people is needed to restore communities, cities and buildings in the new age. This can only occur through creative dialogue, brainstorming and active participation. Because one person is not in full control of the design, there may be many mistakes and imperfections. But leaving room for these mistakes and imperfections will allow for a more natural and free development of the project. A mistake can be seen as an opportunity and might give rise to a solution. Out of this collaborative design process, an architecture that is filled with the life of many souls and that is truly organic and human will arise.

## **Sustainable Architecture – Response to Site, Climate and Culture**



We are living in an age where human beings are doing major damage to the earth's natural habitats and selfishly exploiting nature's resources. Our buildings are being made out of toxic and unhealthy materials like non-recyclable structures, fiberglass, glues, plastics, toxic paints, vinyl and linoleum. Our spaces are being generated out of dead colours, cold metallic surfaces, rigid forms and fluorescent lighting. We are using man-made mechanical systems to heat and cool our homes, which are causing overheating of our environments and poor human health. Mother nature is now reacting to our irresponsible behaviour with global warming, pollution and natural disasters, which are compromising the health and spiritual well being of humanity. Creating sustainable architecture and cities is now the moral responsibility of the architect. The



Careful selection of local, natural and healthy materials, clean energy systems like wind and solar power, responsible site and microclimate planning, use of passive heating and cooling methods, storm water management, embracing a region's traditions and vernacular architecture, use of local craftsman and traditional building methods are all integral aspects of sustainable design that need to be considered and applied. When it comes to designing a sustainable school, all the above aspects should be considered but in addition, education about sustainable design and living should be incorporated into the curriculum. For example, having a woodworking shop where students can become more familiar with the natural properties and life within a material such as wood. Or, planting an organic garden so that children can learn how to observe, maintain and grow their own fruits and vegetables. Even the way the walls, roof and foundation of the building react with the surrounding site and climate will teach the child about an architecture that forms a dialogue with mother nature. Through the design of a sustainable school, the child's knowledge about holistic and sustainable systems will be enriched and the delicate balance between humanity and nature will be restored.

### **Humour in Architecture**



Humour is an aspect in architecture that has been forgotten in industrial times with the construction of brutal, rigid and rational buildings. Humour in architecture helps us associate in a human way with the building. When we see a funny form, doorway or façade, we attribute a character to the architecture. The building then becomes our friend and we say: "this building looks like a person with a big nose!" Like human beings, buildings can also possess funny characteristics. These humorous characteristics can also be expressed through imperfections, protrusions, exaggerations in the sizes of objects and crazy colours in the building. Or seemingly unnecessary and impractical architectural elements like a doorway without a building to enter or a tiny round window located down low on the wall for only the child to look through can awaken our emotional being through laughter. Absurdity calls on what is innately impractical, irrational and chaotic in the human soul. The child has an inner/ natural desire to laugh. If the school building possesses an element of humour within its architectural forms, the sound of children's laughter will be received in and bounce off the walls of the building.

## Imagination of the Architect and the Child

The architect must remember what it felt like to be a child if he/she wants to create a school filled with life. The architect must find his/her inner child in order to design spaces that are best suited for the education and enjoyment of children. The scale, proportion, texture, mass and volume of architectural elements must form an intimate relationship with the physical, emotional and spiritual characteristics of each child. Certain forms and spaces will be appropriate for certain age groups. A toddler may need a warmer, softer surface to play on versus a twelve year old who may want a firmer workspace enabling them to sit upright. Furniture that corresponds to the scale of the child is also important to design. Triggering the curiosity and imagination of the child can also be achieved through artistic, creative playgrounds. With the incorporation of raw materials like sand boxes and simple wood structures, the playgrounds should allow the child to create their own world with their own hands and imagination. Less symbolic imagery more raw forms encourage the problem solving and visionary capacities of the child. If the architect puts himself/ herself in the position of the child when designing a school building, a more playful, imaginative and appropriate architecture for the child's soul will arise.

How would we go about designing a Waldorf school in Istanbul? The important thing to understand is that there is never one answer or one architectural solution. The end product will depend on the journey that is taken with all the participants of the project. It will depend on a number of factors like site, climate, culture, education method, number and age of students etc. But one thing is clear, if we are in-tune with our humanity and the affects of colour, form and spiritual forces on our being, then an architecture that is truly whole will be created.

All of the above principles help us to explore how it feels to be a child and a human within a space. In addition to the design of schools, these architectural principles can be applied to all kinds of functions like hospitals, performance spaces, office buildings, housing projects etc. To go further, the creation of an architecture that is aware of the human spirit and soul should extend into the urban realm as well. Our neighborhoods and cities need to be filled with human life and energy through the careful design of streets, housing blocks, civic buildings and public spaces. When a human architecture is integrated into all aspects of living, only then will we reach a new era where the balance between humanity and the physical and spiritual world will be restored.

Aisha Melodie Hassan - Architect

[1] *"Anthroposophy is a path of knowledge aiming to guide the spiritual element in the human being to the spiritual in the universe."* - Rudolf Steiner

[2] Rudolf Steiner, *An Introductory Reader* – commentary by Andrew Beard

[3] Kenneth Bayes from 'Living Architecture' – Chapter 5. Spirit of the Age

[4] Rudolf Steiner, *Architecture as a Synthesis of the Arts*

[5] Rudolf Steiner, *Architecture: An Introductory Reader* , commentary by Andrew Beard, Chapter 11

[6] Rudolf Steiner, *Architecture: An Introductory Reader*, commentary by Andrew Beard, Chapter 1, note 5

[7] Rudolf Steiner, *Architecture: An Introductory Reader*, commentary by Andrew Beard

[8] Johanne Wolfgang von Goethe (28 Aug 1749 - 22 March 1832) was a German writer and polymath. His work involved poetry, drama, literature, theology, philosophy, humanism and science. His famous works include *Faust*, *Theory of Colours* and *The Metamorphosis of Plants*.

[9] Rudolf Steiner, *Architecture: An Introductory Reader*, commentary by Andrew Beard, Chapter 6, introduction

[10] Rudolf Steiner, *Architecture as a Synthesis of the Arts, Colour Gives Rise to Feelings*, Lecture 4, July 5th 1914

[11] Rudolf Steiner, *Architecture: An Introductory Reader*

[12] The Goetheanum in Dornach, Switzerland was created by Rudolf Steiner as a model for a new architecture and is now the major center for anthroposophic culture.

image 1: Typical modernist public school in Mersin.

image 2: Waldorf elementary school classroom.

image 3: Chimney and gateway of residence building, design by Eric Asmussen, located at the Rudolf Steiner Seminary in Jarna, Sweden.

image 4: Photograph of a whirling dervish performing a sufi ritualistic dance trance.

image 5: Sketch by Rudolf Steiner showing the stages of a plant's growth.

image 6: Eurythmy, Dining, Office and Shop Building, designed by Eric Asmussen, located at the Rudolf Steiner Seminary in Jarna, Sweden.

image 7: Pastel painting by Wolf Kahn.

image 8: Photograph of Sekem Community for Bio-Dynamic Farming and Culture in Egypt.

image 9: Photograph of a gathering outside the Culture House, designed by Eric Asmussen, located at the Rudolf Steiner Seminary in Jarna, Sweden.

image 10: A house located near the Goetheanum building in Dornach, Switzerland.