

# Body, Mind, Space

An interview with Jader Tolja

**Architectural design from the Classical Era and the Renaissance is considered humanistic because "the human body was at the centre of architecture from that period and their approach was to transcribe the most favourable physical condition into stone," stated Geoffrey Scott at the beginning of the last century in his book "The Architecture of Humanism". Today Jader Tolja, doctor and psychotherapist, author of books about the mutual relationships among space, body and mind, from *Il cervello destro e i giardini Zen* (Zen gardens and the right brain, 1982) to *Pensare col Corpo* (Bodythinking, 2000, 2003), studies the effect of space on the brain and the body and, more specifically, works with the principles regulating this relationship, making them available to contemporary architects and landscape and urban designers.**

## **How did a doctor get involved with garden design?**

It evolved naturally from my experience and explorations. As a surgeon, I came to realize that whatever happened to a person physically was very connected to what happened to him on an emotional level. At the end of the 1970's the first department for psychosomatic medicine opened in Milan, and I began a internship to explore the mind-body relationship more in depth. Soon I discovered that "mind-body" was not enough; we must also include the influence of our spatial environment, so I began to explore "mind-body-space."

## **How did you discover this connection?**

We were doing research with chronic psychiatric patients, persons who function without the filter of the "I", who therefore show more directly what happens at an unconscious level. What we discovered was that mind, body and space cannot be separated. Whenever there was a change in the mind of a person, not only his body changed, but to our surprise, his perception of space also changed. Similarly, any change in the spatial environment effected a change in both mental and physical states.

## **How did gardens enter in all this?**

During a trip to Japan in 1982, I passed through Kyoto, where I visited the Ryoan-ji, which is probably the most intense and extreme Zen-style garden in the world. The moment I entered that garden, my consciousness changed. I still remember today the clear physical sensation, potent and unexpected, as though the core of my brain [the subcortical brain or the "reptilian complex"] had become activated, as soon as I entered that space. Before that moment, I had only experienced this state through hard work with sophisticated technical instruments aimed to control brain waves as the bio-feedback ones, or through advanced somatic techniques like those developed by Amos Grunberg, with whom I had previously worked in New York. Suddenly I saw the potency of the effects of space on the brain and therefore also on the body. This realization has far-reaching implications for medicine, well-being and health.

## **Such as?**

Science has shown more and more clearly that a large factor in many diseases is in fact the somatic equivalent of depression. This has been demonstrated with cancer, auto-immune diseases, panic-attacks, bulimia, anorexia, etc. Some of these conditions may improve with antidepressants like Prozac, which artificially increases serotonin levels in the brain. When we consider that 95% of serotonin is produced by the intestines and that those viscera "open up" in a state of subcortical centering, like my experience in the Zen garden, it is easy to understand how such a condition produces a kind of serotonin shower for the entire organism. This flood of serotonin reactivates a vitality and a sensitivity that resonates through the body and the mind, releasing the hold of depression and amplifying the perception of a more spiritual aspect of life.

## **"A perception of the spiritual aspect" in what sense?**

In addition to the sense of well-being I just mentioned, the release of serotonin also provokes a "sense of belonging" to all that surrounds us. For this reason, for example, shamans in Central America used peyote, or ancient Greeks in the Elysium used lysergic acid derivatives, for initiations and rituals. Both of these substances also enhance the release of serotonin.

## **So how can gardens and parks be designed to contribute to a sense of well-being and health?**

There is no absolute criterium; it is relative to the context in which the garden or park exists . In general I believe parks, gardens and

public green areas offer us unparalleled opportunities to create a setting which balances out the other characteristics of a place.

For example, in a place in which nature is still the absolute protagonist, a balancing park or garden will stimulate the neocortex, through elements such as the originality, the complexity and the variety of formal codes (think of Versailles). In such cases the garden represents a place where it is possible to discover and experience mental excitement. Children and young people, who have a great affinity with their own neocortex, or persons who are in need of mental control, usually love these kind of places. They are in general not very different from the bedrooms of adolescents, full of images, objects and symbols, or a Diesel jeans shop, where the hyperstimulation of vision and hearing are considered an added value.

### **And in today's reality?**

In highly urbanized areas we are bombarded by things that demand the attention of our neocortex, from our schools, to our highly organized sports, to the ways we construct and organize our cities. It is practically impossible for us to find places that engage the subcortical brain and that put the neocortex on stand-by or at rest.

For example, think about a day in almost any big city around the globe, where we move through streets full of business signs, street signs, traffic lights, billboards, crosswalks, all constantly calling our attention. For a park in a highly urbanized area, I would give priority to silence, ample space, simplification, and cleanliness, rather than to originality, or, if necessary, even to practical functionality.

### **How can one achieve this effect in the design phase?**

Above all I would advocate for balance and harmony of the whole, simplicity of formal elements, and the presence of water. I would use archetypal forms, already present in nature, or simple forms that the organism recognizes naturally and that therefore support the subcortical brain. By contrast, complex, sharp or edgy shapes like a triangle, and complicated, cerebrally thought-out forms we don't find in nature and which the brain cannot recognize as obvious, cause the opposite effect, carrying us via cerebral thinking into the neocortex.

## **What kind of spaces support subcortical centering?**

A composition that quiets the mind includes elements of nature, with a low center of mass and in which strong and clearly delineated elements are used sparingly. For example, a chain of hills at the foot of the mountains, or a sea sparingly dotted with islands, like the stones in a Zen garden. The neocortex looks for images it can recognize, such as a repeating image, or a cross, or an easily recognizable location. When it finds none of these things, then thinking can stop, and one can access a meditative, restful state, facilitating a profound regeneration. This is why two days of vacation on a sailboat in natural surroundings regenerates you more than one week in a tourist village.

**You mentioned the importance of avoiding strong elements, but when we look at wide open spaces, we also want to make sure that the elements we include are recognizable.**

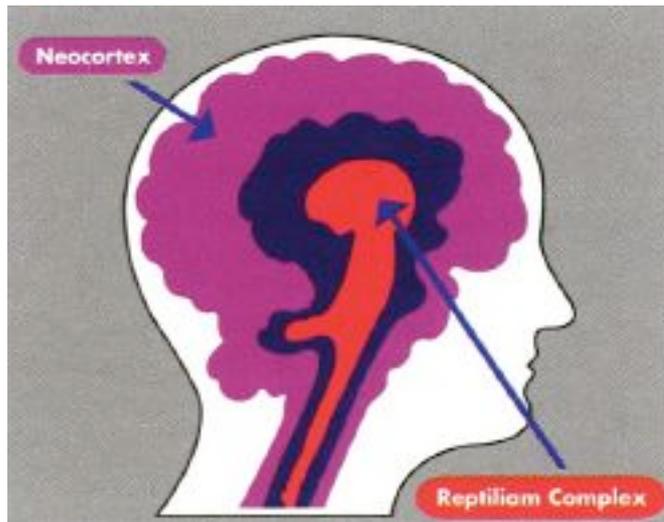
I don't think the problem lies in whether you are distinguishing a larger or smaller space, but in how it is done. A Zen garden, while it has a strong personality, doesn't screech "human nature," but it nevertheless supports one's humanity. In the same way Classical architects found rhythms and forms that resonate and combine harmoniously with our original physical being. For example the little Neoclassical temples in Romantic gardens are artificial elements, but they are inserted with grace in their environment, creating balance and delicacy by using archetypical forms like the circle, the hemisphere, the square or the octagonal. They seem naturally inserted into the surroundings as if they had always been there, instead of creating a sensation of disturbance or taking you into the neocortex.

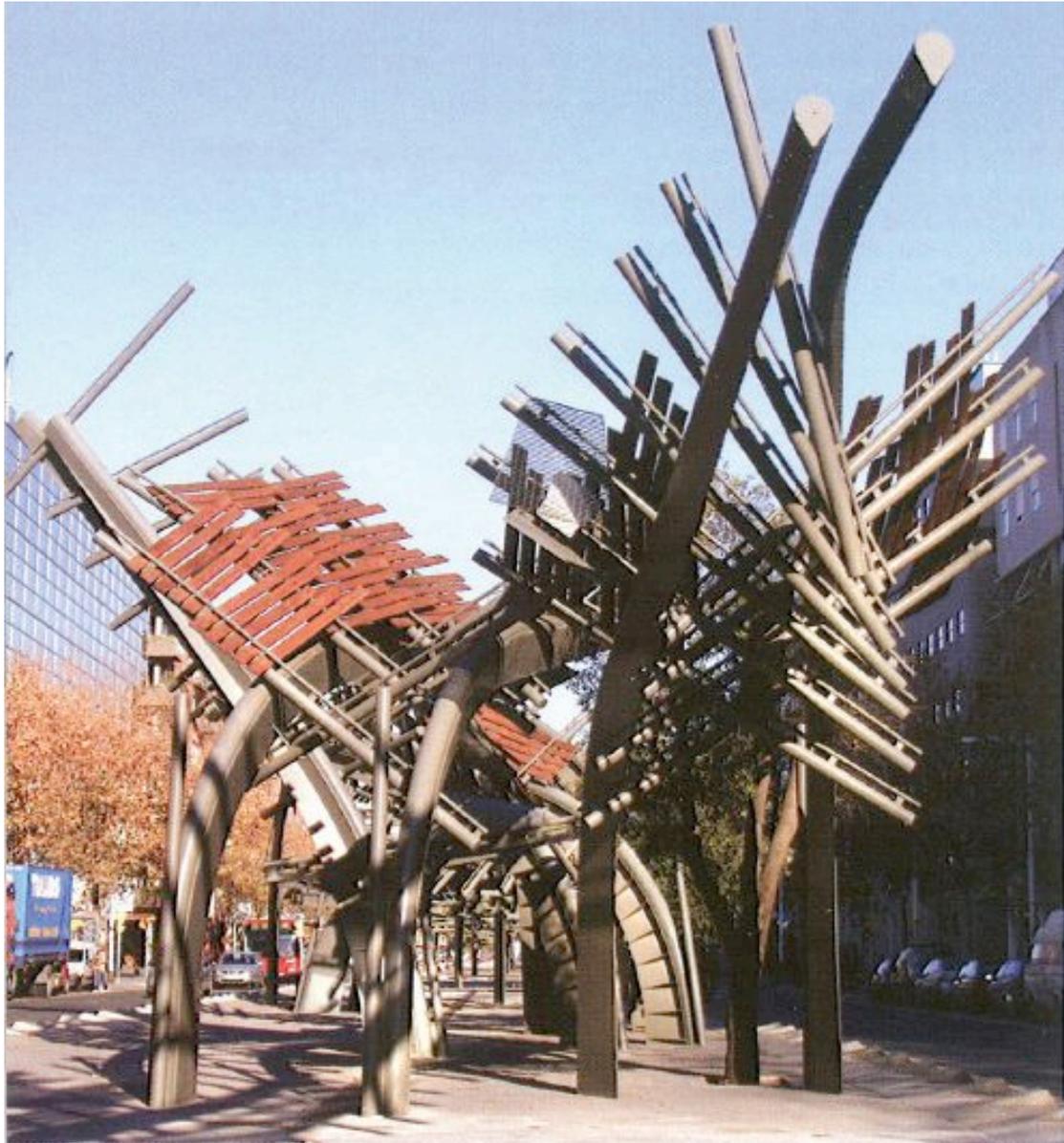
**So are there only two possibilities for designers, creating cerebral spaces or returning to the past to design Romantic gardens or Zen gardens?**

No, obviously not. It would be as ridiculous as to wear a kimono at a dinner in New York. Personally I am interested in a third possibility. Today there are beautiful contemporary Western gardens that use the same archetypical and somatic principles of Zen ones without needing to imitate them literally. Likewise I think that Classical and Renaissance styles of architecture are just two possible interpretations of the humanizing principles of design. I believe that if those principles, are perceived, understood and implemented consciously, can underlie a contemporary human style of design.

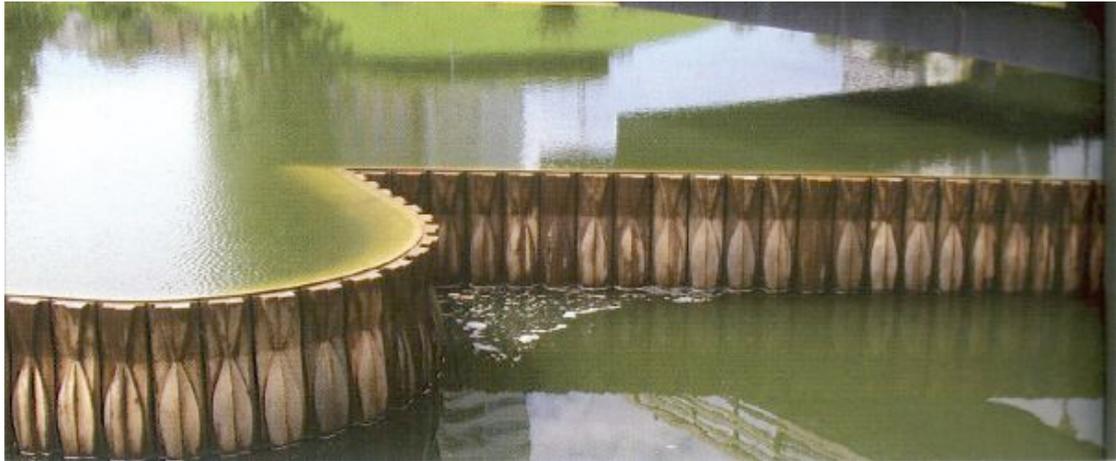
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**Space with cortical affinity:** The complexity of the design, the shining and hard surfaces, the use of different formal codes, its predominantly vertical dimension and the high center of mass make this design very stimulating for the neocortex and not very restful for the subcortical brain.



**Mixed space:** This garden presents solutions for the subcortical brain that are very coherent, for example, the roundness of the poles and the form of the left site of the basin, and the presence of water, the element that has a strong affinity with circular and fluid forms. In contrast, the breaking lines, the mirroring quality and its straight linearity are elements of a cortical style.



**Space with subcortical affinity:** This design supports subcortical centering because the design is simple, the horizontal dimension prevails, its center of mass is low and one unique formal code (the semicircle) is repeated in various ways.