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**Discovering Essence in Presence**

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## Meaning and relation

### *Change and stability*

Since the very start of creation, which most likely has begun with the Big Bang, change is a fact of life. Movement and dynamism are essential features of our Universe. Change has always been, occurs here and now and will never cease to exist. So, it is nothing to worry about. On the contrary, lack of change would be a ground for such worry.

It is undeniable; change is present in everything, in every situation. But, is it really true that everything changes completely? Indian philosophy says: "No, not everything changes. The existential core of the universe – and everything in it – is 'Sat', 'that which undergoes no change'." Buddhism pictures the scales of change with the metaphor of a turning wheel. The outside moves fast and continually, while the hub is stable and unmoving. Does it follow then that in the space between the superficial dynamism of the sensory perceivable universe and the unmoving existential core everything is in chaotic change, in disorder? Fortunately, by accurate observation it has been discovered that already immediately under the skin of the observed world grids of order, containing a certain kind of stability, exist. This grid of stability, these laws of nature, may be stable, but what is being described is the dynamism that is inherent in all things. The deeper the world of forms will be penetrated, the longer lasting stability will be discovered. Certainly, looking for new meaning in architecture and its construction will demand more energy than flowing with the wind of the past or the breeze of the day. But we are fortunate: the need for meaning is an essential characteristic of the human mind. The resulting new practical discoveries, also while researching our common subject "teaching construction in the new digital era", will be of tremendous help to teachers, researchers, designers, students and institutes alike. At the same time, without consciously observing and distinguishing between what is changing and what is more stable no progress can be made in whatever field of action.

### *Wide-angle view*

The Laws of Nature may not be Nature itself, but at the same time Nature and its laws are certainly not separate from each other. The same applies to change and stability. These may seem to be contradictory or opposites; yet, they are not separate, but connected. One of the most important recent discoveries of science is the interconnect-edness of all and everything in the grid of Nature. Opposing elements are united on a common scale and appear to be components in a common composition. Everybody is able to discover opposing elements like: inside and outside, the virtual and the physical, intellectual and emotional, systematic approach and the need to rise above it, digital tools and the vision of a creative heart. This broadminded approach, trying to continuously find relations and a wider perspective is in harmony with the way our brains work. Every activity in the left part of the brain is accompanied by a suchlike activity in the right side and every thought is accompanied by an emotion, whether we are aware of it or not. In order to be able to unite extremes we need to add wide-angle view to precise, but narrow-minded, telescopic view. This will contribute to whole, healthy beings; whole, healthy buildings and a whole, healthy society.

### *Two illustrations*

A number of years ago a student was working for Herman Hertzberger on a music hall in Utrecht, Holland. The design of the project was following what many called a "structuralistic" approach. The main structure of the floor plan of the music hall is a square in which another square, but turned under an angle of 45°, was inserted. At a certain stage the student was struggling to shape a certain lobby at a certain floor. The situation was complicated and Hertzberger took the challenge home in the weekend, as he always used to do. When he returned to the office next Monday-morning and showed his approach, the student was elated to see the solution. While he had been looking down to conceive of a solution, Hertzberger did exactly the opposite: he raised the one specific situation to a higher order.

Students of the "Academy of Building Art-Amsterdam", where I teach, work during daytime in an architectural office and study in the evening. So need to work as efficiently as possible. The Academy asked the help from a time manager. Like in all institutions of architecture our students also need to learn how to present a design verbally. Some have a natural inclination for this, but in a number of even capable students emotional hindrances for such activity exist. Very soon it appeared that the first and the second hindrance were related and united on a bigger scale: the psychological stratum. Everyone has imperfections and quite often these specific imperfections function as a positive drive to achieve something constructive. But other imperfections may impair a student's activities in a certain direction. This was quickly discovered and the initial time manager soon developed into a personal manager of students. By discovering their own unconscious, emotional limitations students often arrive at a higher level, reach a new perspective, attain a new state of freedom and learn how to play, be creative and function more at ease with themselves and consequently how to work more effectively.

### **Blurred and detailed vision**

The Indian mathematical genius S. Ramanujan, who lived between 1887 and 1920, never answered questions regarding the methodology of his approach. However, one day he was commenting on the qualities of a certain English mathematician and said: "He is a very accurate and reliable calculator, yet he will never discover anything new. He has only detailed vision, while in order to discover what is unknown one needs blurred vision."

### *Cybernetic relationship between dream and reality*

Every design process starts as a most personal approach from deep down; as a vision, an initially vague commitment. At first a cloud hangs over the conceptual idea and slowly, in the course of time, focussing on smaller and smaller details will be included, furthering increasing clarity. Designing is a path from the immaterial towards the material. The process of materialisation also starts with an initially vague and general concept, after which an analysis of different occurring situations and their demands follows. After a first decision regarding materials a more precise analysis of the different occurring local positions and their relationships will be started. Whether the direction is for expressed or abstract details ("no detail"), the goal will be: a certain

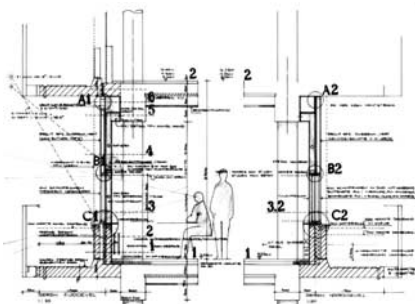
connection between all details in their different occurring locations. The ultimate goal of this approach is unity and a cybernetic relation between different levels and scales. In buildings with expressed details the way of looking is from small to big (and all in-between dimensions) and each detail will have identity, while in projects with abstract details the way of looking is opposite: from big to small and detail have given up identity (but not their specific quality).

Both concept and materialisation give mutually shelter to each other and their common built-in dream, which Louis Kahn so beautifully described: "I felt that a reading-room would be a place where a person is alone near a window, ... a kind of discovered place in the folds of construction." Designing means never to stop being creative while playing with materialisation, continuously going up and down between concept and detail until the two really meet. When such moment of convergence has arrived one can truly say that the concept is ready, and not a second earlier.

## Students

### *Gradual acceleration*

Do students immediately need all available information about the latest knowledge, insights and materials? Let me answer this with a counter-question: is it safe to jump on a moving train, provided the doors are open? Maybe it is better to go to a train-station and accept some time delay. In my opinion the same approach can be applied during the course of education in construction. Yes, researchers, teachers and designers need to possess a wide field of know-how, approaches, materials and constructions, but they need not pour all that over the heads of the students. It is far more important to over-



look what is available, distinguish and conclude what is helpful at a specific stage. If students will be allowed to develop insight and tools in order to make their choices, they will be able to use any present or future method and material or develop new hybrid constructions themselves.

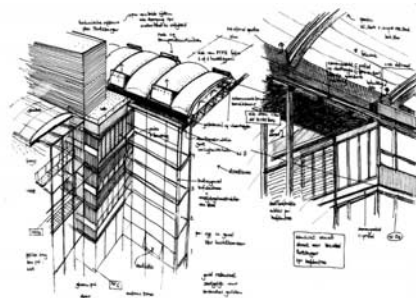
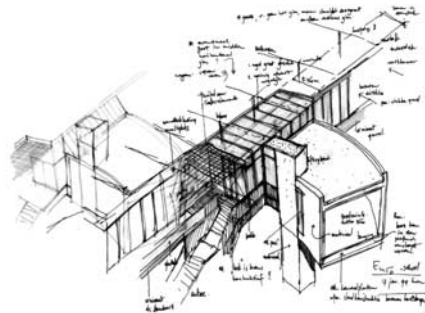
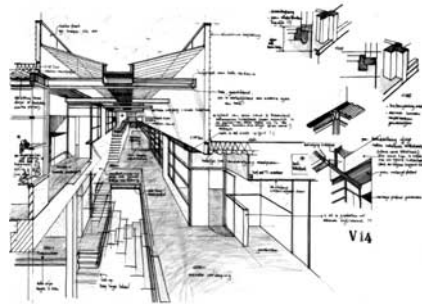
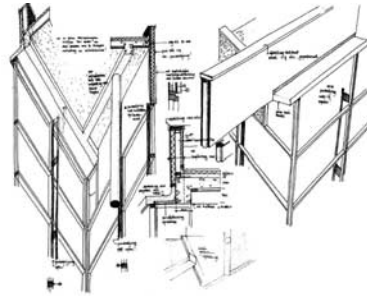
#### *Autistic versus realistic approach*

What students first of all need is the mental space, the necessary freedom to ask individual questions, make individual choices and find individual answers. If they don't learn to come into contact with themselves and develop their own vision, all they will learn is the vision of others. A balance between their internal, autistic approach and the realistic demands of a project will then soon result in the discovery that for no meaningful question readymade or multiple choice answers exist.

#### *Looking behind any screen*

Mart Stam, a Dutch architect, once said: "A door is two meters high and we all know why." He assumed his own understanding and his second assumption was the agreement of the world around him. Le Corbusier was not so sure. His answer was: "The question is not whether a door is 2 meters high. The question is, do we need a door?"

Le Corbusier's approach was more essential. What we know today will be outdated tomorrow. What is available now and applicable at local level will be spread mouth to mouth, through internet, experience of participants of the projects concerned, contacts with the industry, contractors and subcontractors, advisers, researchers and universities. Of course students and designers can learn from the past, but it is still more important to see that the solutions of the past were specific answers to specific questions that were asked then.





## Teachers

### *Mental constructions and "education permanente"*

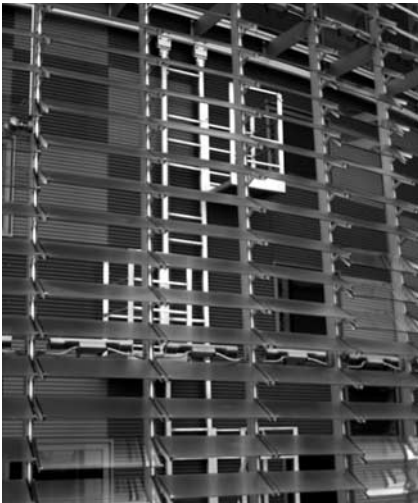
No doubt, specific knowledge is essential for a competent teacher. So, teachers in architecture not only possess enough luggage, they also have learned how to handle this luggage in a creative and/or effective way. But applying this capability individually is quite different from teaching others how to develop this knowledge and collect enough information to start functioning in the field of architecture. Teachers have a much higher responsibility than ordinary or even exceptional professionals. Transmitting knowledge, as well as the ability how to use it, and teaching by example will no doubt be a great help to students, but also teachers need to learn how to rise above themselves. Then they will better be able to also see hindrances that hold their students back in their development. And such hindrances certainly exist. Who will not recognise the power of limiting mental constructions:

"How well did I do this!"  
(*Falling in love with one's own achievement.*)

"I am not good at this."  
(*Rejection of one's own potential.*)

"This is the only way to reach at a solution"  
(*A preoccupied, mental construction.*)

One day a student took his most recent concept to our class bringing a sample of a newly developed building material with him. He showed the sample and said: "My concept-tutors tried to convince me that I cannot possibly use this for the construction of my concept. This material has been specifically developed for constructions that occur in my concept and I want to prove my tutors are wrong!" The answer he



received was: "What do you want to do: to prove that your tutors are wrong or develop your concept into a beautiful design? You can do either of the two. The choice is yours." The student provoked additional reactions, but he was so preoccupied with his own mental constructions that it was impossible for him to receive helpful messages that were sent to him. Finally he became totally frustrated and said: "I have no idea what to do with your answers!" Then we challenged him to discover the different material situations that occurred in his concept and the different influences they were subjected to. It soon became clear to him that this analysis was an essential start in the process of making decisions. After he realised that it is not possible to decide for a solution if the problem is not clear, he was able to view the discussion as a help he could work with.

Pouring knowledge into human vessels will create knowledgeable machines, at the most. But especially in a complex human society creative, co-operative and competent designers and researchers are needed. If teachers and their teaching become freer, more creative and more open, the students will carry the results of this attitude towards any future, be it non-digital or digital.

## **Helpful tools in the digital era**

### *Cooperation*

We live in an age with strongly increased levels of information and emotional communication. We reach wider and wider. At the same time we are able to look deeper and deeper. We have passed the levels of milli- and micro-technology and reached those of nano-technology. We need a new technology doing justice to the deep needs of individual, social human beings and the society they live in, while properly understanding the subtle functioning of biotic and pre-biotic structures in, on and above the surface of the earth. The required knowledge to be able to achieve this is rapidly evolving. The keyword for the next generations is 'structures' and the flow of cybernetic co-operation that is involved. Biotic structures have two distinct but related characteristics; one is the struggle for survival and the other is the need for co-operation. The microbiologist Lynn Margulis discovered that amoebae (unicellular microorganisms) easily exchange DNA, even from antagonistic amoebae. Just like co-operation exists at the lowest levels of life, we can also do everything to further co-operation and consequently benefit from its advantages.

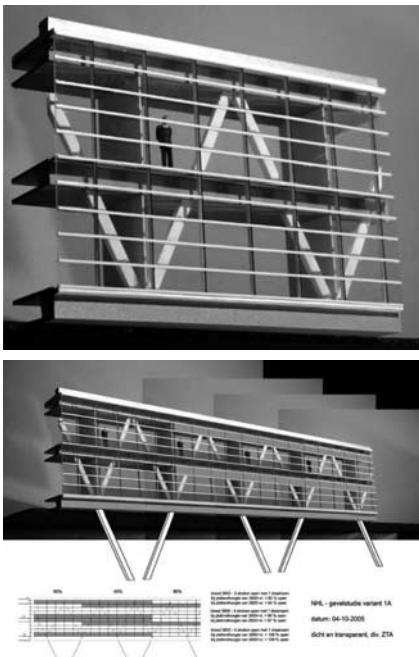
Co-operation in research is a need as well as a realistic possibility. In the Netherlands the TU of Eindhoven has initiated research and co-operation in a foundation "Slim bouwen" (Smart building) to develop new concepts of building products and constructions. Because digital information can be spread fast and towards a large public an internet-site has been opened; furthermore public meetings, seminars, courses and fairs are part of the activity. One first result is the integration of floors and technical installations, for office and housing projects, in a system called "smart floors".

### *Creative use of digital possibilities*

Rationality, creativity, knowledge and competence are vital tools for researchers and designers with vision. The presently available digital technology, which we are going

to discuss, can be a powerful tool in their hands. Yes, digital technology is a tool in a tool. It will certainly change the form, directness, speed and external approach of teaching and designing construction, but it will only follow the meaning that has been allotted to it. No doubt: discovering the potential capacities of the digital - provided the number of system crashes will go down! - Is a joyful adventure, but the information it contains and brings forward is what really matters.

The methodology of the digital will continue to be parallel to existing old ones, physical models will not disappear, neither the use of drawings. It has become relatively easy to combine the properties of physical models with the digital approach. Two examples of this will be presented on the next page.



The first example is a method that has been used to assist in designing a façade of an office-like building. First a physical model on a scale 1:50 was made and photographed with a digital camera. After importing the picture into the computer Photoshop was used to quickly present different façade schemes with varying transparent and translucent surfaces. No need to say that this technique was helpful as an extra illustration in a period of intensive research into the many-folded physical aspects of differently located and oriented facades.

In the second example also a physical model was built; this time on a scale 1:100. A digital picture was made after which it was printed. From this picture a line-drawing on transparent paper was made by hand. The drawing was scanned and imported into Photoshop. Different from the first example, this method was used as an aid in the interior design of a school and a museum. In the process it became easy to quickly make digital notes and consequently judge different possible colour schemes.

