

LET THERE BE LIGHT  
AND THEN THERE IS LIFE

International Concrete Design Competition  
2005/06 plan1

let there be light

opacPlasticity

We have come to our senses and realised that living at the cost of nature is not an option. The built environment is swallowing up more and more space previously suitable as a living environment for flora and fauna – without making up for the loss.

As more and more time is dedicated to an virtual reality custom-shaped to the preferences of any one individual, the fast moving high-tech world is claiming growing stakes in our live time formerly exposed to the sensual stimuli of the natural environment. Reminding ourselves that humans are under contract with both their minds and bodies, it is crucial to be aware of the huge potential that lies in a true symbiosis between the abstract metropolitan life style and the invigorating impulses emitted from a green spot. Both sides are asked to be adaptive, giving up some of their independence in favour of allowing for interference. Surely, at times of pressing overpopulation on one global hemisphere, and densely sealed urban clusters spreading widely over the other, it cannot be the aim to statically revive past states of low-density dwellings nakedly exposed to the powers of nature. The 'natural' way, in fact, has always been a constant structural drifting that compensates for changes in the environment with the aim to maintain harmony. This aim is pursued by any creature striving for survival. In order for us to survive, we have to stay adaptive. The unconscious reactions asked from us by natural stimuli, such as sunlight on our skin or the roaring of a lion behind you, is what keeps us flexible.

Openness for change is flourishing only on a healthy, well-kept foundation: Plasticity unfolding on the merits of opacity.

plasticOpacity

The breathtaking hype that started with industrialisation, went to (im)mobilisation and is heading for virtualisation, has asked too much from the capability of nature to adapt.

It is our turn to do a step towards nature if we are keen to survive as part of a balanced environment. A crucial precondition for sustainable living is the intelligent distribution of the given input. It is a question of getting what is needed to the right person at the time that it is available. So far most attempts to 'store' energy in whatever form have turned out to be coupled with great loss and environmentally alarming side effects.

Our aim is to provide living space for both a well-functioning human society and a largely self-sustaining bio-system – a biopolis. Mutual advantages should be traced down and consciously boosted wherever possible in the frame of coexistence. Here concrete in its thinkable varieties seems to be the pioneering material: based on natural resources processed by humans (limestone and clay made into cement and flint serving as an aggregate in its earliest form), it embodies the concept of fusing natural strength with human intelligence in order to create something even more powerful. Unfortunately, during its production cement releases great amounts of carbon dioxide, so developing concrete further into a cutting-edge building material has to go together with making it more environmentally friendly. One way of dealing with this is to replace cement with other materials such as waste substances from the oil industry that do not involve additional CO2 emissions.

Others are to apply air-filtering coatings containing titanium dioxide surfaces or to add fibre armouring for lighter structures reducing the amount of used material. All these are commendable attempts to adopt the material to growing economical and ecological demands. Over long-term perspective though, we will also have to keep rethinking and reinventing the practical application of the resources that physically determine our built environment and therefore our very style of life. The awareness of our origins rooted in the physical world where the powers of nature are ruling is vital to understand how we fit into the surroundings that we were born into. Today, if done well, buildings are made to meet the needs of the people occupying them; the next step is to meet the needs of the people stepping into the world after these buildings have seized to be.

Opacity sheltering the hesitant advances of plasticity.

let there be life

Living on earth means living together. With every living being. Metropolitan life shields our mind from the fact that our larger environment is still naturally determined. It is us who have to live with nature, not the other way round!

**Redistribute Opacity**  
Instead of blocking natural influences off the surface of the earth with square-kilometres of light- and water-sealed ground, the concrete takes over the task as a link between metropolis and biopolis. Light hitting the glass fibre connected concrete surfaces is carried further into the core of the building or underground exactly where it is needed. Making supporting structures also carriers of light loosens the barriers urban life has been constrained to since both sides of the transmitting element offer stimulation from direct, 'live-broadcast' sunlight.

**Revive Plasticity**  
The redirected sunlight helps, in cooperation with rainwater collected from the concrete surfaces, to naturally grow vegetation in previously for plants unreachable parts of the city. The green newcomers, such as psilotum nudum, are candidates well adaptable to new environments and there spores are planted as a layer on the formworks directly onto the concrete during casting. Another layer of fertile sponge material leaves wholes in the cement structure as a growing basis. This way live comes to the very supporting structure of the building and make it part of constant change in appearance and character.

