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Timer design: light and color in the interaction with time

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ABSTRACT

Studying the light and colors in their dynamic variation over time becomes important because to design time and his gears becomes a task is not out to architecture, urban planning, design, especially where multi-functionality, absence of context, vocation to reatit and leisure becomes the architectural programme. To be effective in the transfer of environmental realities in other places, you have to work on the physiology of the body, on excitation or relaxation of certain glands to produce effects of doping at the building scale. The scan of time in these places has nothing to do with chronological time marked on our clocks, with time outside. Time of these areas, which could be snowcapped mountains, Caribbean islands or underwater rooms, is accelerated or contract depending on the experience to be produced, the senses are not the means but the goal of architecture. In those places is not sufficient to produce artificial snow to support the experience of snow in the mountains, the metaphor is based on something less visible and obvious: the manipulation of time, meant more as a "timer" than "time".

Keywords: Architecture, Time, Timer, Senses, Sensorialism

Introduction

Natural light has always had a close relationship with time, and often has its own sundial to measure its rhythms, its quality.

The position of the shadow, its slope, its projection and color-light have always been important design tools to emphasize shape and size, but also for orientation into space and time.

In the architectural history, as narrative of styles and theories, there is included also the story of the relationship between natural light and artificial light in the time: natural, divine, essential and perennial one; artificial, human, discretional and discontinuous the other.

The history of light-matter and light-color is intertwined with that of circadian, physiological, chemical, rhythmic timing... allowing a reading of the architectural evolution of XX and XXI century, but also to understand the directions that the contemporary architecture is going to take. Before the discovery of the electric light - recent if you think that has little more than one century- the architecture was considered only in its daylight performaces while in the night it was dark and inscrutable, a condition "OFF" for architecture and city.

The history of electrical applications in architecture occurred throughout the XX century, dying the darkness for a lightscaping always ON, indifferent, even in the absence of bodies.

To set out three key theoretical texts on the subject could be from Junikiro Tanizaki's book, *In Praise of Shadows* (1935), in which Tanizaki worried about the extinction of the penumbra in the Japanese culture due to the advent of direct light; and continue with the Roland Barthes's book, *The Empire of Signs* (1970), written during the early years of the electronic application; to conclude with a poetic appeal of the small volume of Peter Zumthor, *Atmospheres* (2007), which begins the twenty-first century with a desire to challenge the view in favor of light as a tactile material. The advent of electric light changed not only the urban and architectural lightscaping, but also the perception of time in architecture.

The clock light that marked the social times of the pre-modern society, added hours of life to the spaces of modernity and postmodernity in later. It extended the pre-existing productive possibilities allowed by natural light, but also to overcome them.

A - The separation of internal light and external light

The modernist architecture opened outward, toward the light and the view through the pursuit of transparency. Light and air were measure standards of quality that gave the best of modern international identity to the architecture of XX century. But it is precisely in those years that starts the process of creating an indoor environment with different quality inside and out.

Around the Seventies the western architecture started to break its relationship with the light outside, with natural light, with the climate, with any agent can introduce unforeseen or independent variables.

The desire to increase the productivity of the building, and often the radicalization of the weather, started to close the buildings within themselves.

The time and the microclimate inside were changing over time and the weather outside, making it necessary to



Fig. 1-2

The same frame from a window at 11 a.m. and at 11 p.m., Gifu, Japan

intervene with a design tailored to the quality of these adiabatic boxes that have become many buildings. A large part of contemporary architecture changed the relationship between external light and internal light, often denying the interference between the two because it was out any possibility of the government. Natural light is excluded from the buildings -playing at most with the building envelope- and the inner simulates its qualities, but with a new time: deformed, accelerated, compressed as necessary for logistics and trade. In contemporary architecture, where the temporal dimension and optimization of space and flow is increasingly important, artificial light often becomes a manipulator of time and its perception. Natural light, that was for centuries natural meridian of time in architecture, gives way to an architecture introverted and decontextualized.

B - An open24hours architecture

If we watch the same city frame from a window in different times of day and night very often there isn't a corresponding recognition.

There are cities with a culture of light and color as Paris, the Eiffel Tower is landmark both day and night, but there are whole areas of urban sprawl that are unmarked: the day has a landscape homogeneous of light and color, leaving at night the constellation of billboards of open trade, which vibrate as lanterns to attract consumers.

In a book by Mirko Zardini, *Sense of the City: an alternate approach to urbanism* (2005), which accompanied the homonymous exhibition at the CCA (Canadian Center for Architecture) in Montreal, the author introduced a chapter devoted entirely to the Nocturnal City, at the enlightened architecture and city like it was not seen since the publication of *Learning from Las Vegas* written by R. Venturi, D. Scott Brown, S. Izenour (1977) and *S, M, L, XL*, by R. Koolhaas and B. Mau (1997).

In the globalization of trade is possible to track the latest manipulation of architecture by artificial light: the *genius loci* and its qualities (colors and lights) give way to the corporate code to be used equally in Seoul, Paris, Taipei and Cape Town.

These globalized places are the same everywhere, synchronized on multinational corporate rhythms, able to be indifferent to the time of the place and of its inhabitants.

A place that sums up this idea is the *convenience store*, usually a shop where you can buy the essentials, from milk to nail polish, from newspapers to the detergent. These stores, appeared in Japan in the late XX century, have a sensory project designed to produce a cell time, as attractive option.

The light is clear, never hot, or variable, but cold and constant, always equal to itself at Tokyo as Sendai.



Fig.3
A open24hours shop, New
York

It is an absolute light to enlight all products in the same way, which must not create shadows in the corners even innermost of the shop. This light immerses the space and products in a consistent and unchanging sense. The exterior is only a window using commercial strategy of seduction. The convenience store emits an aura of light that attract people inside.

C - From sensory to sensorialist

The abuse of contemporary lighting, sound, smell, color to simulate different situations, often led to "sensorialist" instead of "sensory" architecture that laid the sensory qualities as a goal and not as a tool of design.

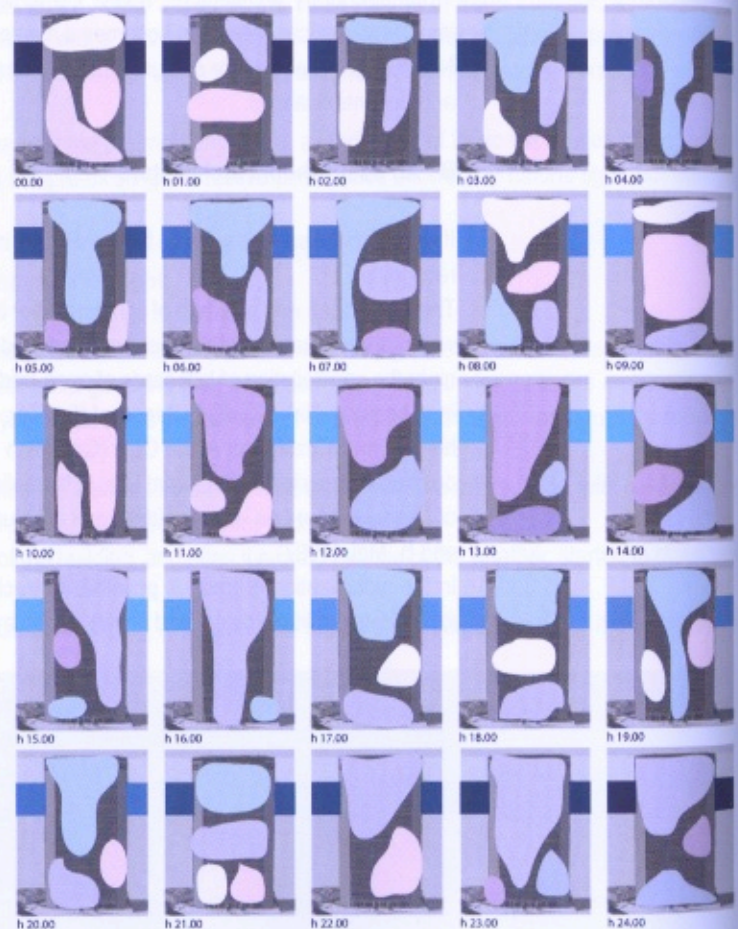
Places, having cracked their relationship with time and the light of the context in which they appear, become undifferentiated sets for business.

This is the logic of shopping centers, places of leisure and relax ... those places are able to manipulate the perceived time through microclimatic changes due to light, colors, shadows

...

In the mentioned *Learning From Las Vegas*, (1972) the authors told of spaces -referred to the architecture of the *strip* in Las Vegas- unrelated to the external light that can disorient in the space and time, in which the idea of "where" and "when" is lost because the light of noon and midnight is exactly the same.

It was the beginning of a period in which some buildings were only to be seen at night and not during the day, places that lived in the other half



Legenda

- A: Education
- B: Care for babies, elderly, pets, plants
- C: Sacred: crematorium, shrine
- D: Business: distributors and recharge energy, money, food, music, news, merchandise.
- E: Entertainment: sports, culture, music
- F: Welfare: medical, hygienic, psychological, aesthetic
- G: Hospitality: temporary rooms
- H: Safety: control and care

the hourglass ... buildings that can stop time in a temporal dimension indifferent: a continuous day/night. To ensure efficiency not only environmental, but also psychological, these places had to use metaphors and consequent technological devices to assist them.

In these time-machines the light has become more important than elsewhere because its quality was the most important, perhaps the only narrative tool.

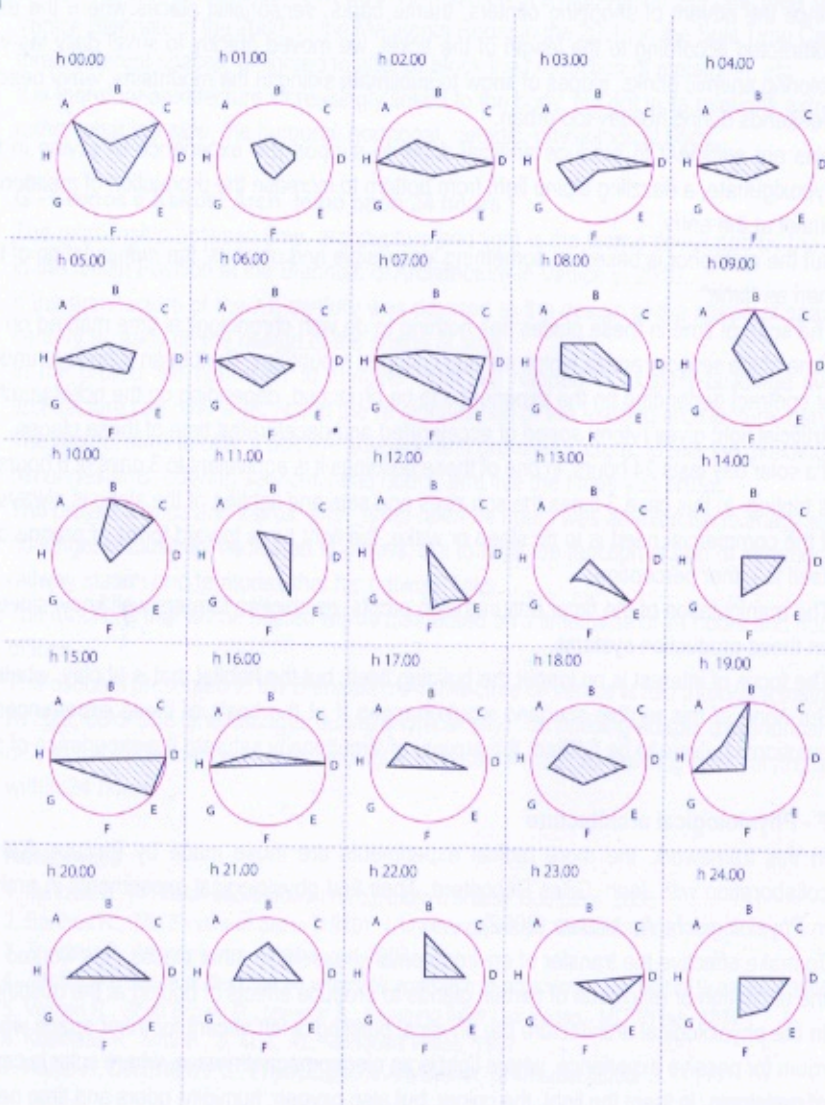


Fig. 4-5
Cronos_Kairos, a time-based
project for Pirelli skyscraper,
Italian Pavillon, Biennial of Ar-
chitecture, Venice, 2010

D - Digestive City

In this deformed scenario also the light becomes mainly artificial, because best suited to the sensorial effects that the architecture wants to design. This city needs light, but does not require sight, because the landscape is too close to focus on any horizon or perspective. It's a city of interiors, an enclosed space without limits, has no unique perspective, but kaleidoscopic and labyrinthine one.

The buildings that have these temporal and environmental characteristics clump, densified parts of the city to become a system of sites to each other without freedom of choice, unrelated to the outside.

Is the city swallowed up by concatenated spaces without perspective, where space is limited and there is never glimpse of heaven. It

is a "digestive" city, composed of interiors, continue spaces, with no horizon. These are often places without shade, because they have the quality of simultaneous flash and which have nothing to do with the passing shadow on the volumes.

E - Timer design

Since the advent of shopping centers, theme parks, sensorialist places where the experience is accelerated and contracted according to the length of the ticket, we moved quickly to small daily las-vegas, in form of solarium for coloring anemic drinks, slopes of snow to sublimate skiing in the mountains, wavy beaches to manage homeopathic weekends during holiday too urban.

Was not sufficient to produce artificial snow to support the experience of skying in the mountains, it needed air hypoxigenate, a dazzling alpine light from bottom to increase the production of melatonin, and maybe there is a fake chalet at the entry.

But the metaphor is based on something less visible and obvious: the manipulation of time, meant more as a "timer" than as "time".

The scan of time in these places has nothing to do with chronological time marked on our clocks, with time outside. Time of the sensory areas, which are snowcapped mountains, Caribbean islands or underwater rooms, is accelerated or contract depending on the experience to be produced, depending on the ticket purchased at the entrance.

Artificial light gives rythm, speed of accelerated and decelerated time of these places.

If a solar day lasts 24 hours, in one of these buildings it is equivalent to 3 days of 8 hours: simply activate a timer, cash is tripling. In this case 3 times the sun rises and sets and lighting of the slope is always perfect.

If the commercial need is to do sleep or wake: the light turns toward tones of orange or blue and the body prepares itself to either perception.

The manipulation of the timer ensures high profits, as chicken farmers well know since they have built their fortunes on these production systems.

The focus of interest is no longer the building itself, but the habitat that is at play, whatever the cost.

But none of this terrible scenario would happen if at the basis of these experiences there was not some sort of emotional bulimia to be fulfilled: the anxiety of simultaneity saturate the experience of places and times.

F - Physiological architecture

In this framework, the more radical experiments are those made by Philippe Rahm, until a few years ago in collaboration with Jean_Gilles Décosterd. Their first physiological experiments in architecture have been published in *Physiologische Architektur* (2002).

To make effective the transfer of environmental situations in other places, has worked on the physiology of the body, the excitation or relaxation of certain glands to produce effects of doping at the building scale.

In the physiological architecture the physical building is left vacant for inner space where the active exercise leaves room for passive experience, where light is an electromagnetic wave, where color is capable of reduce the production of melatonin. In them the light, the colors, but also oxygen, humidity, odors and time needed to produce physiological

strain in humans can perceive space differently.

Questions arise from this scenario: if architecture can stop to have a precise function as it could be a museum, a house, a shopping center and will become direct only to the reaction to ensue. As happened in the project for the university district of Lausanne (1999) in which they will "cure" seasonal depression (SAD) using a light-emitting artificial; in the Hormonarium that was reproduction of a high-Alpine site designed for the Switzerland Pavilion at the Venice Biennale in the 2000; in the Melatonin Room in the 2006; in the Split Time Café in the 2007, a bar divided into three different spaces, enlightened to alter or block the production of melatonin, etc.

It is therefore architecture increasingly linked to the body, but not in its relations extracorporeal and sensory, but rather what is inside, the humoral, hormonal, genetic, physiological body.

G - Cronos e Kairos: Arch_temp open 24 hours

The relationship between time, architecture and light is the theme developed by the author for the project presented in the Italian Pavilion at the Biennale of Architecture in Venice in 2010.

If the architecture of the XX century was devoted to the design of the shape of space, you might think that the XXI century is ready on the design of the shape of time.

In the project the author try to imagine what will happen to existing buildings over the next 40 years and how architecture can offer a service in the re-signification of the existing architectural heritage.

The project aims to offer a positive scenario and promising future, to use the buildings of the city always ON such as decongestants, offering services at all hours, and live the times you prefer.

The project *kronos and kairos: arch_temp open 24 hours* was an exercise in imagining the Pirelli skyscraper in Milan no longer exclusively dedicated to offices, but to fulfill the function of hub of intermodal times between the cities, the railway station and territories that his network links.

The functions that will be hosted will be distributed on a timeframe of 24 hours and not just 8 working hours of existing offices.

The concept presented to the Biennale of Architecture of Venice is told through a meta-project showing the building in its light, color and time changes during a typical day. The building-shape, a cylindrical structure is fixed and changing only in the performance of color and light, it contains within its building-time varying shape and volume continuously within 24 hours.

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