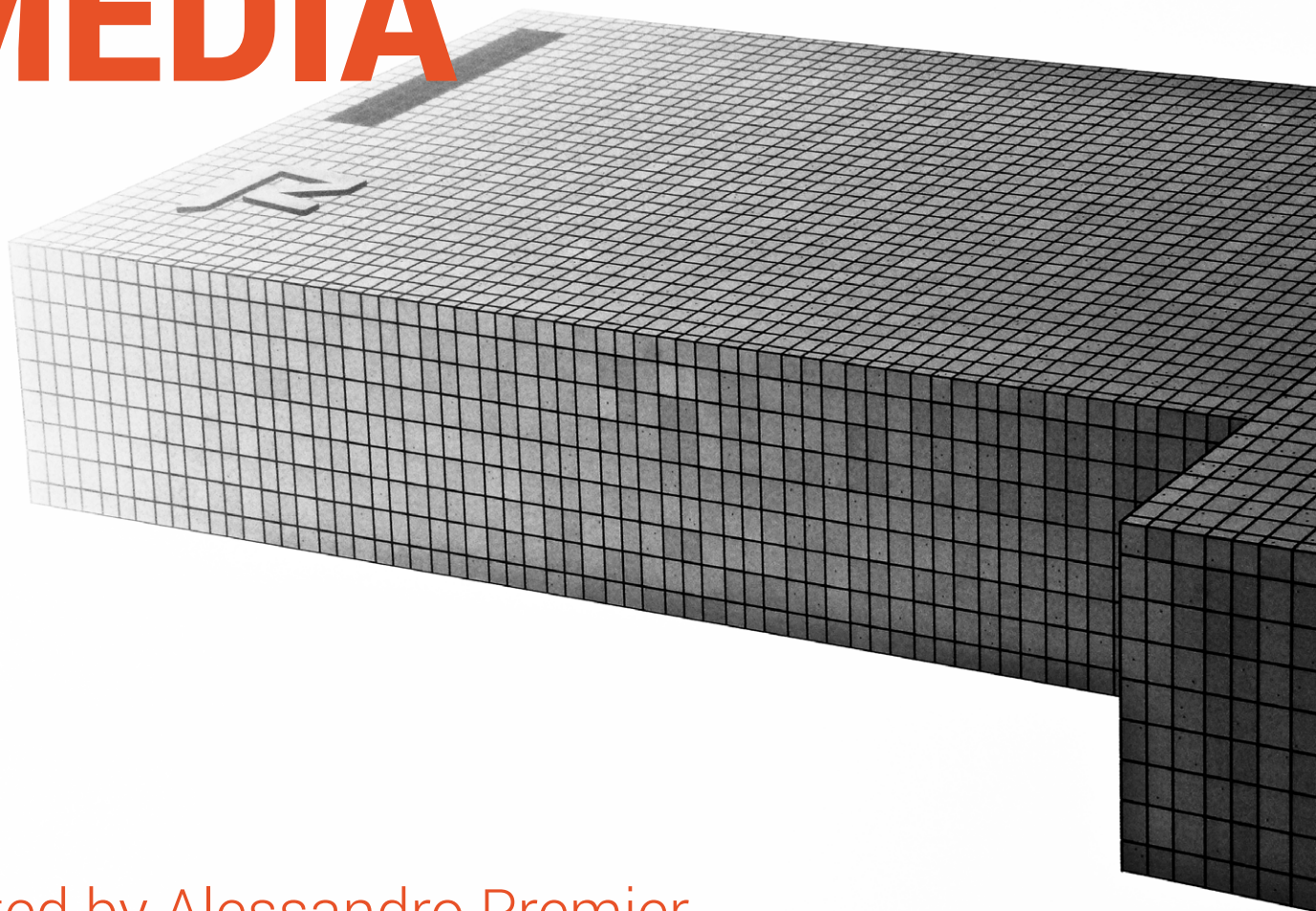


Screencity
Journal

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**COLOUR
ENVIRONMENT
INTERACTIVE
MEDIA**



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PHOTOSENSITIVE ARCHITECTURE

THE LUMINOUS LANDSCAPES OF COMPUTERS AND SCREENS

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Abstract

The use of screens for a large amount of activities during the day and the night has definitely changed our relationship with the places, both in terms of space, brightness, both in terms of time.

The lighted city and internet enable us to be productive 24 hours for day and then force the circadian rhythms of our day into new temporal typologies (chronotypes) whose characteristics are to be still explored. The architecture lighted by screens wants to be a productive, confident, animated, safe.

Beyond the transformation that the screens are introducing in the image of the contemporary city, it is also interesting to analyze how screenscapes are changing the buildings in terms of facades, but also of interiors. It begins with the entry of other monitors in the home that the centrality of the TV has multiplied. The increase of presence of the screens multiplies the points of attraction creating new centres indoor. From this point of view the main places that reveals an interesting relationship between the screens (computer, TV, etc..) and space/time are: the offices (half-private); the places of passage (half-public) -mentioning Walter Benjamin's *passages*- and the waiting rooms.

Keywords

Architecture, Chronotypes, Interiors, Screen, Senses, Times

Screen-façade

The presence of computers and screens are also transforming our more traditional architecture both inside and outside.

The impact of the screens on the facade of the building does not change only the urban lightscape (during the day, but even more at night), but also the relationship between facade and interior in terms of: lighting, in terms of message, in terms of rhythms.

The façade that, in the greatest tradition of architecture, was born as a perfect transposition of the plan, to become its storyteller, to represent in vertical its style, meaning and function, has now become more like a video for advertising, an information map, an extra-story with a life completely independent from the building itself.

This mutation of their relationship is one of the most interesting paradox left to us by the XX century.

Without going back far to Venturi-Scott-Brown, when they described in *Learning from Las Vegas* a city night scene of shows and entertainment, and they took for granted that the same city, during the day, would have existed almost exclusively as the backstage of the other.

We could recognize that today, the change was not so radical, but sometime even more complex and intriguing: dramatization is not relegated only to the night hours, but often to verbose screens that transform whole parts of the city in cacophony of sound and images, as well Rem Koolhaas describes in "Junk Space". Screens are no longer relegated to the front side of the building, but they are skins, technological surfaces, vertical cityscapes in continuous movement.

The architecture, which was a tectonic reference in the city of the XX century, loses another piece of fixity with the diffusion of the facades with screens.

To the design of the forms of space is reached the design of the shapes of the time.

Through the mediaskin program, that introduce dynamic elements in the static architecture, passes one of the possible ways of designing time-based architecture.

In the last century were the camera, the train, the car to increase the dynamism of the bodies inside the town, adding to the mobility of the observer also the architecture, both immersed in the same reference system.

The observer of the fourth dimension (time) in the XXI century is not only passive spectator but he takes part to the large projection in urban scenarios, being himself sometimes protagonist or manipulator of the show.

From the sensitivity of one of the first digital buildings of architectural history, the Tower of Wind by Toyo Ito, we arrived at adulteration by Asymptote architects, where the façade becomes digital matrix able to shape, to bend, to redesign the building, the urban space around it, but also to engage the interior, as they did for the GVM, or the "3-D Trading Floor" for the New York Stock Exchange in Wall Street.

New chronotypes

The ever-lighted architecture, where the screens lit at all times, designs the city of the non-stop time, open 24 hours per day. The variable of time is extremely important, because the rhythms of the screen are fine tuned with the ones of the city on the move.

As much as the communication times of the messages projected on the screens are perfectly attuned to the times of the transportations (bike, bus, car, subway...), or pedestrians, the more the message is reached.

They are not commensurate to the static city but the dynamic one, at the speed of its fluxes, at the cadence of its rhythms.

The sequence of the images on the screens is a plausible measure of urban times, if not the driver to flow the information at the same speed of the people.

The more easy image, even if it refers to an analogical world, is the one in which the screens are like small gears, inside a clock complex as the city, to tune the different speeds.

In this urban geography, grow up new forms of time, and therefore new types of architecture whose matrix is temporal rather than spatial.

In a recent publication¹ I tried to explore these types of chronotypes, and some have emerged strongly related to this subject.

The chronotypes are architectural "types" whose matrix is not formal, but temporal.

The relationship between screens and architecture creates contemporary chronotypes like:

- *cararchitecture* (which is a translation of a terms used by the architect Zaha Hadid) which is in the relationship between the speed of transportation, the shape and the information of the screens on the buildings. This relationship arises from the fact that the flows around the building all have different speeds. The perception that one has of a building observed at 4 km/h is different from that at 40 km/h. The message on the screen tunes to a main speed, or depending on the time of day on one

rather than another. The chronotype is the result of an algorithm linked to the movement of a point on a line rather than at a fixed point;

- *intermodal* regards the interchanging nodes where the screens are not only information and advertising. The chronotype intermodal uses various performances of the screen: the hypnotic power of the pulsating light for advertising; the signal value of the information that often is functional to the distribution of the flows; the ability to slow down or speed up the individual speeds in the transition from one mode of transport to another;
- *media skins* in architecture that replace the building envelope with a big continuous screen or sometime that create new shape of the building itself. Many media skin host art installations or interaction with an audience present or distant communicating and amplifying the magnitude of the effect;
- *branded*, which sees the skin as the advertising page of a magazine in which the screens are the perennial celebration of the brand hosted into the building. They are advertising screens that we have always known, but which became, thanks to the degree of resolution of the LEDs, giant televisions at the scale of the buildings/squares/infrastructures. The time of the advertisement that flows is the one of a stop waiting, a red light.

Screenscapes indoor

Beyond the transformation that the screens are introducing in the image of the contemporary city, it is also interesting to analyze the screenscaper inside the buildings.

It began with the presence of screens within the buildings through the last 50 years of architecture, with the entrance in the '50s and '60s of the TV and introduced a new "fire" in bourgeois homes.

The TV revolutionized extremely spaces, furnishings and symbolic hierarchies into the residential architecture of that time: the main chair was no longer in front of the fireplace, but facing the TV, as well as the living room was not around the tea-table, but directed to the new pole animated by television.

With the entry of other monitors in the home the centrality of the TV has multiplied.

The spread of projectors and screens increases today the points of attraction creating new poles both indoors and outdoors.

- The screens inside the housing are placed in various ways: as paintings hanging on the wall, i.e. as static surface in a point to offer the show (so were the first monitors ... instead of the fireplace);
- as audio/visual attractor, in its performance always ON, and therefore capable of directing the interior according to a geometry of "visibility" of the screen and its contents;
- as a generator of space, composing new ways of living, changing the architecture itself.

They are the new protagonists, able to open new "windows" on other places, to light the scape of the house with new performances, to become independent from the electric range and to disconnect the monitor from the perimeter walls, standing everywhere.

The geometric-symbolic relationship between the sofa and the TV is so iconic that it resurrected recently by Future System with a SOFA in memory of Jan Kaplicky, where a large bed/sofa -reminiscent of the Roman *triclinium* - has a circular shape, at the center a small navel-table to allow to see 360 ° a small TV included into the sofa.

Physiological mutations

The XX century had raised the issue of transparency at the heart of research in the interior spaces.

The century of desired and reached hygiene had placed natural light as an inalienable right for the living spaces. Healthy was synonymous with lighted space and the quality of the places was assessed by this parameter. Even the places of the privacy had been unable to hide behind curtains and veils, but they had to accept the entry of light as guaranty of cleaning. The XX century had taken away the darkness even at night, lighting up with electricity the darkest areas of the city.

But remove the natural light or otherwise lower the brightness is causing a progressive time dis-perception, a continuous distortion of circadian and natural rhythms, an input in a fluid time dimension that can start and finish when you want.

The screen comes in bright lightscape of the city and of architecture as a bright pixel, able to inform, enlighten, but also to alter the physiological rhythms of our body.

The most recent applied physiology reveals that the light emission of the screens keeps the body in a state of unnatural sleep-wake cycles.

The places under the light of the screens even at night live a kind of "forced awakening" as it is deduced from the path of the electroencephalogram, but also by the eye movements much more similar to daylight hours than at night.

A change in melatonin levels that, if you live in a daylight screens, do not have the natural increase as it is usually in the case of night shifts, for working or because of jet-lag.

The main places that reveals an interesting relationship between screens (computer, TV, etc.) and spaces are: the offices and workplaces 2.0 and the places of waiting or passage (mentioning Walter Benjamin's "passages").

Workplaces 2.0

The offices of the most important companies in the digital sector 2.0 are becoming perhaps the most interesting points of view to study the new screenscape in interior architecture.

These places, now less and less tied to traditional hierarchies and geometries, mix productivity and research, live and work, study and recreation.

The spaces are informal and open to have the characteristic of being always connected with the outside world and with the next network of collaborators.

These qualities create the hybrid and complex spaces, both from the point of view of privacy, of concentration, of needs of light and darkness, of silence and collaborative dialogue.

One of the simplest issue raised by the presence of the screens in our architecture is therefore the management of the different degrees of darkness ranging from natural open air light to the closed darkness.

Although the most advanced technologies of digital are able to offer high performance even in bright sunlight, it is undeniable that the digital world achieves the best effects in bright twilight and darkness.

The best performances of the screens, takes place in dim light and in a relationship of shading from direct natural light.

In short, we use computers in offices almost dark, preferably with diffuse light.

For this reason (and not only) the offices in the recent architectural production have incredible transparent and bright open space for socializing, and shadowy spaces scattered by cabs to work at computer.

Interesting examples are: the Microsoft headquarters in Wien, designed by Innocad, where natural light is always filtered and is never used for lighting function, but rather psychological; or the offices of Google Camenzind Evolution in Stockholm and Zurich; the Facebook offices, by O + A, Palo Alto, 2009; AOL offices, by Studio O + A, Palo Alto, 2010; BBC Worldwide's offices, by Thoughtspace, Sydney, 2010.

Waiting rooms and passages

Such as the offices 2.0, also the passing and interchange places become extremely important because they are usually flow channels for acceleration or deceleration.

The presence of screens is usually functional to motion and not only to the message that is transmitted. It is referred to the subway stations, or the waiting rooms, as well as to the long underground passages or treadmill or escalators.

Usually these places are manned from advertising, but also lend themselves to interesting experiments in art and design.

To mention two examples installations: *Travelogues* by architects Diller and Scofidio and *Civilization* (Megaplex) by artist Marco Brambilla.

Travelogues was an installation inside the anonymous corridors of JFK airport in New York.

Defined by a one-direction movement, the corridor hosts a series of screens (made in collaboration with Tom Brigham) that comprises thirty-three backlit lenticular screens evenly spaced along the 1800 linear feet of corridors of the International Arrivals Building. Each screen holds one second of action, animated by the speed of the moving viewer. The sequence of screens creates a sort of micro-movie: the spaces between screens form time lapses. Each set of panels tells a short fiction about an anonymous traveler via the suitcase they carry. The cases are x-rayed and contents materialize to trigger a flashback of a travel experience.

The movement of passengers becomes thus pro-active with respect to the sequence of screens engendering an interesting interaction on content, on time and space.

Civilization is also a very interesting project, because it is a video installation inside the elevators of The Standard hotel Chelsea in New York.

The video installation has its narration, which however is emphasized by the movement of the lift. The video is inspired by Dante's *Divina Commedia* and according to the movement, upward or downward, goes to Heaven or to Hell.

In this case the narration of the screen fills a moment of non-sense, through a narrative assisted by the movement: the observer moves, the narrative video and the display move too.

The relationship between space and time that is established through video installations is the subject of research conducted by Daniel Birnbaum in the book *Cronologia. Tempo e identità nei film e nei video degli artisti contemporanei*², which explores the experience of time as experience rather than as a way.

In this panorama emerges, from the building, the absence of any trace of memory: the “screenscape” is a world turned on perennial present, which instead could build an interesting dialogue with the pre-existing, with the history, without necessarily deny it, neither abolish it.

It is therefore begin to consider the experience of screenscapes, not only about the content being projected, but about their performances as dynamic light sources, such as watches capable of scanning rhythms of living and creating, as new actors of architecture that can reformulate space and times.

The contribution of the different times on the space is perhaps one of the most challenging design problems for the architects of the future.

Design the forms of time, and not only the forms of space, acquiring those new tools and scenarios that media technologies make increasingly available, it will be a mandatory task.

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Biography

Anna Barbara. Researcher in architecture and design, 1968. Graduated in Architecture at Politecnico of Milan. From the 1998 to 2001 she lived between Italy and Asia. She has been visiting professor at Kookmin University in the Architecture, Design and Interior Design faculties and professor at the Techno Brain Master 21 at Seoul (South Korea). In the 2000 she won the Canon Foundation Fellowship for making a research at Hosei University Faculty of Architecture and Town Planning in Tokyo (Japan) on the relationship between architecture and senses. Actually she is researcher in Architecture Design at Politecnico di Milano in the School of Architettura e Società, campus Piacenza. She was visiting lecturer in many international faculties of Architecture and Design in United States, Korea, Japan, Philippines, Brazil, Emirates, Jordan, etc. She is co-founder with Luca Molinari of VIAPIRANESI srl.

1 A. Barbara, *Sensi, Tempo e Architettura*, Milan: Postmediabooks, 2012.

2 Italian version translated by Postmediabooks, (Milan: 2007).



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