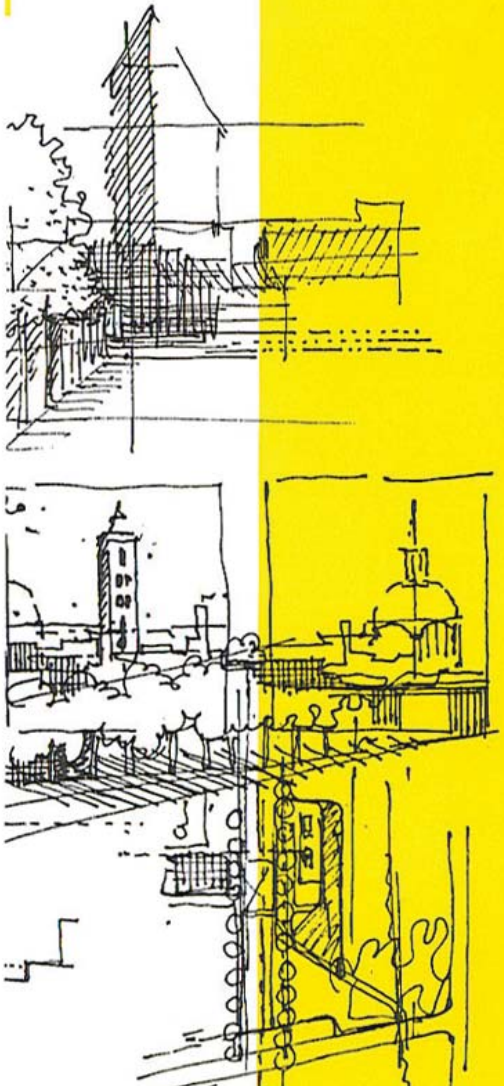
Ecological Design

for an Effective Urban Regeneration



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Redefining Urban Space in the Information Age

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Architecture's main goal since the beginning of human history was to provide protection and shelter from weather conditions as well as surrounding men and animals, what is generally referred to as environment. In order to achieve this, man had to construct horizontal and vertical shells that will protect him, thus creating separating lines which will define personal space. These limits were sustained when societies became to form larger clusters, later evolved into cities. For many years men build walls and walls in an effort to keep out of their territory, as individuals or communities, the rest of the world defining in this way lines that separate places from spaces. At the same time, the material hypostasis of these limits leads to the localization in space of certain activities separating private from public functions. Either by coexisting in the same geographical area as seen in many traditional cities, or by being separated into zones as the Modern style commanded, public and private buildings was clearly distinguished within cities.

In this presentation the city is conceptualized and referred to as pictured in Giambattista Nolli's map of Rome of 1748. In those maps public buildings and free, outdoor, public space are identified and are only distinguished from private buildings. It's about reducing the city to an aggregation of built and inbuilt, private places and public spaces. The two parameters mentioned, the development of limits between private and public and the localization in the area of the city of certain activities have played an important role in the forming of cities for many centuries. In this presentation we will demonstrate that developments in communication technologies drastically affect these two parameters.

A key element of this approach is the persuasion that the way in which the physical space of the city is formed is a result of the actualization of actions, relationships and contacts between its citizens. (Alhin, J.M.Roberts). The information and communication technologies (ICT) add a great degree of complexity to the system affecting "*the key elements of urban society – the home, the office, public buildings, the automobile and even parks and streets,*" (Moss, Townsend) altering the form of the city. "*As nineteenth-century railroad workers had laid sleepers and steel to shrink the windy distances of the North American frontier, post-whatever construction crews were putting in place an Infobahn -and thus reconfiguring space and time relationships in ways that promised to change our lives forever. Yet their revolutionary intervention was swift, silent, and (to most eyes) invisible*" (Mitchell). Nowadays, the basic infrastructures of buildings as well as cities are the networks which allow the use of communicational media such as telephones and computers. Today's architecture should manage network flows, incorporate their facilities and relate to their structure. According to Castells "*we no longer live in a situation determined by the space of places. We live in an environment determined by the space of flows: money flows as information, technology flows as information, knowledge flows as information*". The use of ICT in everyday

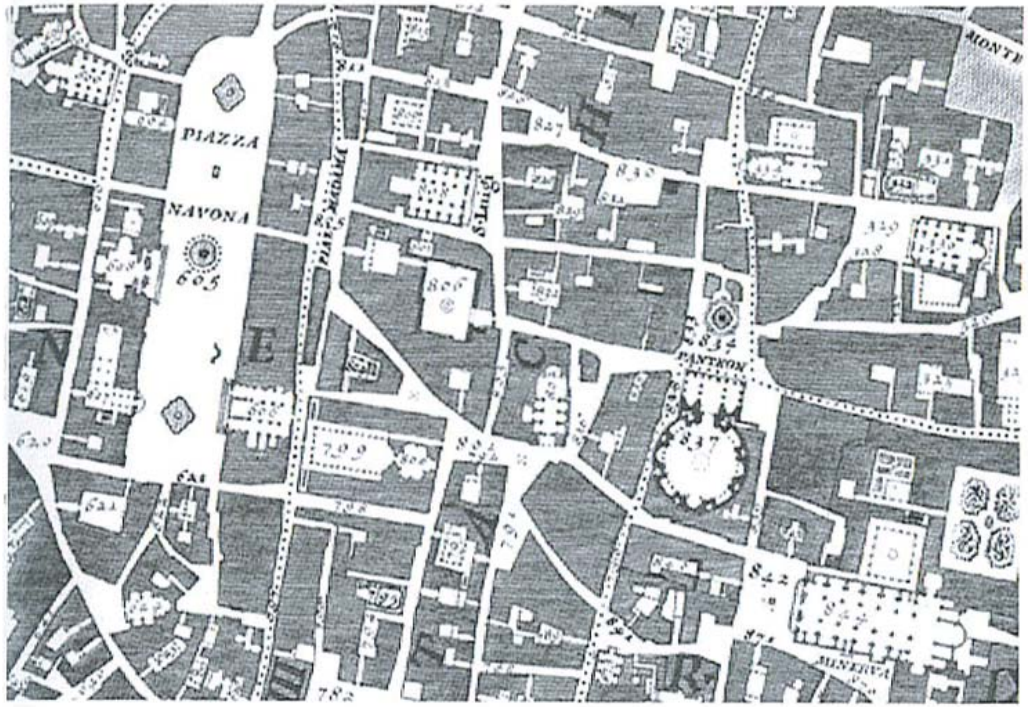
practice, unlike in the past where mans actual presence was required, have created a new, parallel to the physical space, virtual space. The actualization of relationships, actions and contacts between physical space in distance, in real or unreal time (asyghronus communication), activates these virtual space giving it a constantly altering form. "*There are two conditions to consider the physical space of architecture as we have always known it where enclosure, form and permanence will undoubtedly persevere, and the realm of virtual architecture, now emerging from the digital domain of the Internet. Objects, spaces, buildings, and institutions can now be constructed, navigated, comprehended, experienced, and manipulated across a global network. This is a new architecture of liquidity, flux, and mutability predicated on technological advances and fuelled by a basic human desire to probe the unknown. The inevitable path for both these architectures, the real and the virtual, will be one of convergence and merging*" (Rashid). The merge of these two spaces has actually begun years ago. The phone and the TVs at home, the electronic message boards in the streets, the phone booths which have been a basic component of urban supplement for decades now, have doing nothing else than providing access to this virtual environment. This common and evident merge of actual and virtual space has created the unified, hybrid space in which we live. In this hybrid, flowing space we should be searching for the importance and the role of limits and the location of activities.

The buildings of walls in an effort of protection.

Architectural Examples

The first big step forward this direction was the appearance and incorporation of the computers and the internet in buildings, both private and public. In this way a large amount of the citizens activities can be accomplished without their transition to the physical space in which they occur. Education, work, commerce and transactions can be partially or completely done from a person's home. Activities with a public character invade private, personal space through our computers. The computer screen becomes, thus, the limit between private and public space. « *?his computer screen, more than the television, has intensively and extensively transformed the meaning of the facade as barrier. Unlike the externalized physicality of the screen's now distant ancestors which acted as foils or operative others to the hidden private spaces of the individual, our outside world is now permanently interred in our most intimate private spaces*». (Winka Dubbeldam)

The substitution of the tangible limit of the façade between the public and private space by the symbolic means of the computer screen, is what Bernard Tschumi marked



Giambattista Nolli's map of Rome of 1748.

by designing the proposal for the Hague Villa in Netherlands in 1991 (photo 04). The living room and office where the personal computer is facilitated is being transformed in to an open space in which the sense of privacy disappears. In order to express this change, he separates the house into two zones, one constructed completely out of glass whose transparency indicates its public character and where the all day use places are located. The second zone is constructed from solid, intransparent walls made of concrete which assure and symbolically represent the privacy of this zone in which the bedrooms and bathrooms are included. This zone represents the sustenance of the traditional sense of home as a *retreat* in the way Walter Benjamin was stated. With this proposal Tschumi achieved to express the rupture in the home's structure due to the use of computers. *"The house is to be seen as an extension of city events and a momentary pause in the digital transfer of information. The borders of the living room and the workspace, devoid of ornamental camouflage, expand beyond the property lines just as they are undermined by the electronic devices of everyday use that they contain".* In this way the substantial limit between private and public penetrates inside the home.

Meanwhile, new types of public buildings trying to respond to the new, unified public space by incorporating new technologies are being created. An example of such a building is the ZKM in Karslroui, Germany, where a media art museum, an exhibition of modern art, research and production music, video and virtual reality laboratories and multimedia library which allow visitors to research art and technology. OMA's project which won the first prize of the competition, proposed the condencement of the program to a 43x43x38m cube, in which unified spaces with great density of uses and operations are called to meet the demands of the program. In this way a constant flow and transition of research and production to the presentation, from private to public spaces and from classic to electronic media is accomplished. The facades which reveal the inner core of the building with their transparency and with the placement of the trafficking (hallways, ramps, staircase) in the outer perimeter, play a very important role in the building. In addition to that, an entire façade has been covered with an electronic curtain in which events inside the building, commercial spots, the news, announcements related to the nearby railway station and personal messages of the users of the building which are visiting it either physically or through the internet, are being projected. In this way the façade is being transformed into a digital epidermis which reflects the life of the building. Toyo Ito in an article underlines this exact dimension of architecture saying that *«in*

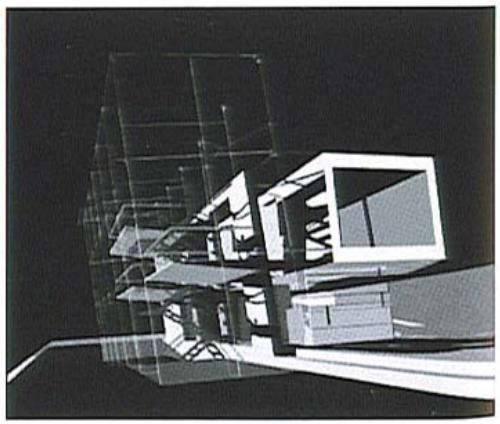
1960s, M. Mcluhan said that our clothing and shelter are form of our skin. From old times, architecture has served as a means to adjust ourselves to the natural environment. The contemporary architecture needs to function, in addition, as a means to adjust ourselves to the information environment it must function as the extended form of skin in relation both to nature and information at once. Architecture today must be a media suite. People, when clad in a mechanical suit called automobile, had their physical body expanded. People clad in a media suit have their brain expanded. Architecture as media suit is the externalized brain .In the whirlpool of voluminous information, people freely browse through information, control the outside world and appear themselves to the outside world. Instead of appealing to the outside world by armouring themselves with a hard shell-like suit, people do so by wearing a light and pliant media suit which is the figuration of information vortex». Toyo Ito himself had already being experimented ever since 1986 with this idea when he constructed the Tower of Winds in Yokohama (photo 06). An old tower of ventilation and water supplying was converted into an installation more than a building since it no longer serve a certain use. The 21m diameter construction was made out of mirrors, lamps and reflectors which were placed into 12 luminant rings of neon light. A sensors system collected information from the environment relevant to the wind, the temperature and the noise level. This information was then processed by a computer and the patterns created by the lights changed accordingly. In this way the building became a mirror of the conditions of the urban space surrounded.

What is common in these two buildings is that they both work as links between the physical environment, people and the web. We can claim that both are the creation of the relational architecture as it was later defined by Rafael Lozano-Hemmer. According to Lozano-Hemmer "*Relational architecture can be defined as the technological actualisation of buildings and public spaces with alien memory. Relational architecture transforms the master narratives of a specific building by adding and subtracting audiovisual elements to affect it, effect it and re-contextualize it. Relational buildings have audience-activated hyperlinks to predetermined spatiotemporal settings that may include other buildings, other political or aesthetic contexts, other histories, or other physics*".

Latest Technogies

In addition to the examples mentioned above, the ICT invaded and were incorporated to the buildings causing them to alter within the last two decades. The common factor in these approaches is that computer (mainly) as an accessory and supply of hybrid buildings offer access to the virtual space providing and actualizing several social, entertaining and working activities. During the last years, though, technological evolutions seem to be changing from start this attitude. The main characteristic of this new approach is the effort of integrating new technologies into objects of everyday use that man carries constantly with him, in other words the integration of technology in man himself. Therefore there is no longer need for a tangible gate of some sort, so there is neither the need for a spatial location of such places. Throughout the world, mobile phones increasingly add an element of uncertainty about physical location to our urban interactions. Almost without exception, one of the first things cell phone users exclaim in response to an unexpected call is where are you? And according to a survey by the mobile operator OmniPoint, as many as one-fifth of cell phones users lie about their location when talking on a mobile phone. Nowadays tele-

Bernard Tschumi marked by designing the proposal for the Haguevilla in Netherlands, 1991.

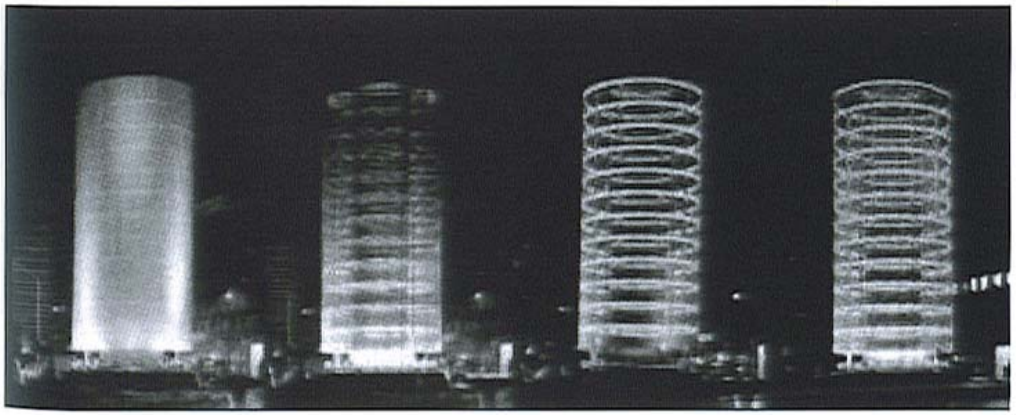


phones refer to people rather than the places where handsets are located. Until only a few years ago when we wanted to contact someone we called him where we thought he might be. We actually identified our communication and people with certain places. Today the specific place where a person is has no really importance, so the person is identified with the space. By establishing antennas, mobile telephone companies try to cover all urban areas to make communication possible everywhere. In this way they define in a sense the limit of a city: "*the city is anywhere your cell phone might work, all other places are the country*", as stated the commercial slogan of a cell phone company. This is no exaggeration if we keep in mind our consideration of creating space of actualizing actions, relations and contacts. In this way "*the mobile phone might lead to a dramatic increase in the size of the city, not necessarily in a physical sense, but in terms of activity and productivity*". (Townsend)

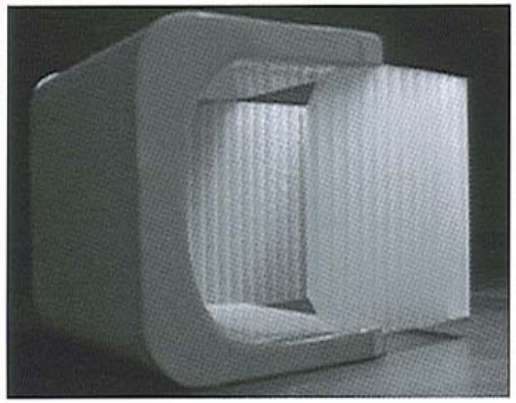
At the same time, with a dramatic increase in the use of cell phones worldwide (even in developing countries), wireless communications are likely to significantly change the use of computers. The latest development in this area is Wi Fi networks. This are wireless networks using radio frequencies with no commercial use (2400 -2483, 5 MHz) and through which access to the internet as well as communication between users becomes possible. The only requirement is a card receiving signal and which can be incorporated into a lap top, a pda or any other micro appliance. The speed of data transfer through these frequencies is very big and can reach 2 Mbit/sec with a minimum cost. For some time now several private companies offer access to Wi Fi networks in their facilities to their customers such as Starbucks coffee shops, Borders bookshops, and Hilton, Marriott and Sheraton hotels. Even airlines such as Lufthansa will soon be providing access from their airplanes as is already possible in many airports (Athens International Airport is one of those). In New York WiFi transmitters are being installed in phone booths giving the opportunity of access to the internet within a hundred meters distance from the booth, while in Paris an ambitious project will soon be initiated installing transmitters in all metro stations. In the Spanish city of Zamora a subscribers company has installed transmitters which covers the whole area of the city offering wireless access to the internet from any part of town to its 60.000 inhabitants. Wired magazine refer to this development as the *Wi Fi "outbreak", the first explosion in the broadband revolution.*

Along with the development and the diffusion of Wi Fi networks, institutional and industrial research (mostly in EU) is moving ahead in the area of Disappearing Computer. This trend deals with the development of multi appliance and the integration of information technology in objects of everyday use. The goal is the simplest use of technology in the everyday need for entertainment, information, work etc., without the use of elevated cost and complex to operate computer. As a result those small, easy to use and low cost appliances are be-

The tower of Winds in Yokohama An Toyo Ho experimented in the '80s.



ing developed which are able to combine telephone, reproduction, storing and listening to music, taking pictures and videos, access to the internet, use of software etc. Such technologies are even corporate in objects such as clothes, furniture and so on.



Architectural Propositions

Those technological evolutions are changing once more the way we perceive, experience and move in the city. Nowadays, *"life in a modern urban city is a social struggle rather than a struggle for physical survival, yet in this role, post moderns humans are every bit nomadic as their Paleolithic ancestors". (Kopomaa)* The individual can now carry on him or her all the technology necessary for communicating and realizing any action. The need to be in a specific place in a specific time is constantly decreasing, increasing, thus, the possible options. Man can now move in a unified, flowing space whose initial use is indifferent since it can actually be altered and defined differently any given moment by any given user. In this way the need for exact localization of certain activities disappears and the scattering of activities within a space becomes possible. "*We will characterize cities of the twenty-first century as systems of interlinked, interacting, silicon- and software-saturated smart, attentive, and responsive places.*" (Mitchell).

Designing public spaces nowadays should take into consideration these possible alterations. Thinking in such a manner along with a group of fellow architects (Roussou Natalia, Chrisokona Maurou, Soulis Nikos), we participate in the "Ephemeral Structures of the city of Athens" competition which was announced by the Organising Committee of the 2004 Olympic Games. Our participation proposed a scattering within the city of small structures which we referred to as capsules, respective to other urban supplies such as benches, phone booths, garbage tanks etc. and which are placed into leftover spaces, urban voids (photo 07). Those capsules have been constructed in such a manner to be able to host, transmit and project cultural activities and in the same time encourage the people's spontaneous participation. Instead of one, single, localized building we suggested small scale structures that can be easily moved and installed in any part of the city. There, any passer by or inhabitant could use them in order to give some sort of performance, to give a speech, to sing, to play music, to read a poem or to send any kind of message. His actions would be recorded and transmitted in real time to the other capsules where other users would

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Ephemeral Structures of the city of Athens.

be able to choose which performance to watch and at the same time interact by sending back audio, visual or written message or even improvise. The user would be able to perform without an audience in situ, so the capsule operates as the transmitter of his actions. It is possible that the capsule hosts at the same time the audience watching the performance, simultaneously with its transmission and therefore acts as a transceiver. It may also act as a receptor alone by projecting performances given elsewhere. The form of the capsule was designed in such a way to allow easy alteration by the users in order to adjust to their needs as well as to the specific features of the site. Additionally it is designed in order to be self sufficient. According to the location of each capsule in the city and the state of operation any given moment (transmitter, receptor, transceiver), a constantly transforming and adjusting network is actualized. This network at whole, tangible and intangible could reflect the idea of scattering certain public activities within the city. *"The post – information age will remove the limitations of geography. Digital living will include less and less dependence upon being in a specific place at a specific time, and the transmission of the place itself will start to become possible"*. (Negroponte)
Pushing the trend of separating operations and localized buildings to the extremes, the University of Kuwamoto in the project who won the second prize of the Acadia Competition for universities, on the temporary character of libraries, proposed the actualization of a library in the woods. Specifically "*with the use of mobile technology, the former concept of library as a designated building type can be reconsidered as an undesignated space which can be chosen at the users discretion... we propose the borderless and shapeless forest as the best location for this library*". Constructions which carry within them the appropriate technology act as bookshelves, virtual tends are set for group reading, while an elementary coverage for weather conditions is provided. It is evident that the project isn't completely realistic, but mostly futuristic, it schematize though a possible future direction.

Conclusions

What's important is that the possibilities for work, education, transaction, entertainment and commerce, offered by computers and the internet are being amplified since new technology allows us to use it anywhere. In this way activities can become dematerialized and the limits can flow and change between spaces since it is likely to shrink around man himself. Regis Debray propose a hypothesis which could easily be perceived as a building's metaphor. "*With texts with no hard edges or shell, circulating in a library without shelves or walls, between readers who no longer need libraries because they are directly connected to one another (or between telestudents without schools or teachers) and dwelling, moreover, in networks of Los Angeles like urban communities without monuments or centres. These are either utopias or atopias. The less a community's memory ends up being physical and territorial, the more it will be mental and scriptural. Why deny such an utopia?*
Electronic immaterialism could then be the prelude to a kind of return to earth, wood and stone."

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