# Hackitectures.
# Reordering Physical Spaces, Electronic Flows and Social Bodies. ISEA2017

**Laura Rodríguez Moscatel**

Universidad de Cuenca.
Cuenca, Ecuador
zoerast@gmail.com

## Abstract

The architectural gap between the real and the virtual from the point of view of inhabiting is a field of study within the branch of the Hackitecturas - driven by the need of the technological subject to be a participant in the transformation of the places that he inhabits. The current emerging society, the society of information and knowledge, begins to demand changes where spaces for social reality are appropriate to its needs. From here, architecture - the science that deals with the organization and production of the space we inhabit -, has to reach a transformation in the development of its concepts and goals in order to organize and produce new spatialities. In order to do that, architecture itself generates the need to begin to connect with other fields of knowledge, getting to know, imagine and create the new habitants.

## Keywords

Hacker, Architecture, Hybrid Spaces, Electronic Flows, Social Bodies, Geolocalization, Free Software and Hardware.

## Introduction

"Real time, open broadcast and participation from different geolocations and their staging are the keys to redefine the architecture and activate the new public space" (pablo de soto / hackitectura.net / 2003 / okupa futura _ corvera)

From a Hackitecturas approach, it is considered that the current situation of the network society can serve as a basis for identifying the necessary conditions in the incorporation of the Space of Places to the Information Society. Conditions that will change the concept of habitability, since it will no longer be that of having to be physically in a place but, through connectivity, it restructures and generates changes in temporal space relations between the local and the global, places and spaces.

"(...) the most intensely contemporary architecture is one the that poses as priority these issues; the wisdom, the knowledge and the production of spaces of flows"(De Soto, 2003, parr.6)

Multiple emerging processes are participating in the current spatiality of flows and network organization technologies, generating the configuration of alternative spatial orders and habitats within the architectural space. In this context, all the dichotomies that make it unstable begin to redefine, its transformation being visible through the communication systems and nodes that work in favor of habitations suitable for new needs.

In this article we make an analysis, based on the conformation of all spaces, electronic flows and social bodies, in order to investigate their connections and their meaning in society and the contemporary territory.

The study of habits opens up an understanding of them towards the architectural as a deterritorialization (Deleuze and Guattari), as a social and at the same time material and mental production (Heidegger, Lefebvre). We work here from imaginaries, cartographies, narratives, trying to think architecture from the margins through social, cultural and technological transformations.

In light of this we can ask ourselves, how do we intervene the territory? And above all, how do we incorporate the electronic flows into the thought and forms of space production?

## Text

The term Hackitectura encompasses the aforementioned thoughts, a word that comes from two activities and therefore diverse terms. On the one hand we have the word Hacker and on the other hand the word Architecture, which must be defined in order to position and contextualize this analysis.

Tthe term Hacker in the hacker jargon dictionary - the "jargon file", collectively compiled on the network -, defines hackers as: People enthusiastically engaged in programming, and who believe that putting information

into common spaces constitutes good, and that it is also an ethical duty for them to share their expertise by developing free software and facilitating access to information and computing resources whenever possible. (Himanen, 2002, p. 2)

Broadening the term, a hacker is a person who has stopped using his computer to survive and has moved to the next two stages. He uses the computer for his social ties: e-mail and the Internet are the ways to access and be in contact with the community. But for the hacker, a computer is also entertainment, the computer itself is entertainment; you get entertainment from the fact that you are doing something interesting and at the same time achieving a social impact.

Following with the analysis of the terms, Architecture is analyzed within its most contemporary understanding, that is, as an artistic, scientific and research activity, which deals with inhabiting and, therefore, with the ways in which we are in space, its transformations and the creation of new ways of habiting. This had been defined by Perez de Lama as "(...) a recombinant practice of physical spaces, electronic flows and social bodies that is carried out by groups of people whose specialties include diverse backgrounds: architects, programmers-technologists, and citizen-activists." (Pérez de Lama, 2007, p.55)

According to Eduardo Serrano the territory can be intervened, transforming the relations between the physical environment and the inhabitants, making electronic flows enter as a component able to modulate the relations between both, producing territory.

The transformation of places and spaces must begin to be designed taking into account the multiplicity, the invisible space of the immaterial and their connection flows. The need for an architecture of interfaces and nodes makes it essential to develop a rhizomatic structure in the search for systems that are not self-centered but in continuous expansion.

Society is at the present time within what is called the Network Society which, according to Castell, is characterized in the space sphere by the transition from the space of places (traditional architecture) to the space of flows (contemporary architecture).

Through these definitions it can be seen how in a territory connected as part of the space of flows, life there will also have other dimensions. This new way of inhabiting, creates new urbanisms generated by the application of these digital networks to the configuration of the city. This city, typical of a hyperconnected society, aims towards the search of environments capable of feeding the human experience.

The space of the flows is giving rise to a rhizome, generating new geographies, emerging from variable and liquid geometries, and proposing machines of transformation of the world whose objective is the connected multitude. Free diffusion, shared information and knowledge are all in the hands of communication technologies and information as well as globalization.

It is possible to imagine other diagrams for the space of flows, other assemblages between globalization and non-formating; compositions that, from the point of view of urbanism, had been defined by Pérez de Lama (2006) as "geographies of the connected crowd" (p.19).

The hackitecturas use a methodology, both collectively and conceptually, of free software and hardware, in order to explore the theories previously analyzed. Through experiments, they recombine ideas of science fiction, technology and social movements for the generation of these territories.

The tools of free software and hardware come from a discourse of social cooperation and collective intelligence. They are used in order to generate the social construction of public spaces, open and participative, that favors the integration of the subjects in community. The ethical motivation behind the use of free software is inherited from the hacker culture, which argues that software is knowledge that must be able to spread freely, and that its concealment is not only an antisocial attitude but also that the possibility of modifying programs is a form of freedom of expression. In this aspect one can go deeper into essays by Richard Stallman or the analysis of Pekka Himanen in her book "The Hacker Ethic and the Spirit of the Information Age".

Free software is not limited to being free, it also has a fundamental social value, since the only restriction that it receives is that of being free, which means that it can be explored, verified, reproduced and extended in all its capacities for the benefit of all, in a manner very similar to the nature of science production. The use of this type of tools, as well as the projects generated related to hackitectura, are moved by social, participatory and collective changes, making use of shared knowledge.

In terms of projects proposed within these territories, at the national level there is a project of territorialization, the Information Society Project of Extremadura and Línex, for the construction of a public communications

network combined with the development of a free operating system for educational and administrative use (Línex: Linux + Extremadura).

Once the construction of the network was resolved, those in charge, bearing the political responsibility over it, considered the need to acquire equipment and software to make it work. It was then that the pioneering and futuristic possibility of installing free software, which at that time was becoming a viable alternative, came about. That is to say, instead of buying licenses of nearly monopolist suppliers of software - called proprietary -, Extremadura decides to mount all the management software of the network and of the operative systems and applications of all its computers with programs of open code, free software - which is free or available at low cost for its use and transformation, as it has been developed cooperatively by thousands of hackers, for what has also come to be called the collective intelligence of the Network.

With its own development of an adaptation of GNU / Linux, the standard of free software, the adaptation would eventually become GNU/LinEx http://www.linex.org. With the savings, important budgetary items are dedicated to the training of local programmers and technicians, and to educating the population about the new digital platform.

As it is often the case, great innovations are not easily recognized. And although the Extremadura + Línex Intranet project is well known especially in the field of information technology, it is not in the area of urban planning or land management. However, it is undeniable for any unprejudiced observer that the deterritorial/reterritorializing capacity of the information society project in Extremadura goes far beyond any traditional project that could be undertaken with the conventional tools of the architectural or urbanistic disciplines.

William Mitchell, former dean of the School of Architecture at MIT proposes another concept that is in connection with the above mentioned about the relationship of subjects and the use of active free technologies: With the new inhabitant for / with whom to think, Architecture must cease to be the isolated individual, center and measure of all things (that of humanism), to become as Mitchell called spatially extended cyborg.
We would do better if we took as a unit of subjectivity and survival, the biological individual plus its

extensions and interconnections (...) I am not the Vitruvian individual, enclosed in a single and perfect circle, mending the world from the perspective of my Personal coordinates, while determining the measure of all things (...) I build and I am built, in a recursive mutual process that continually implies my fluid and permeable limits and my networks indefinitely branched out. I'm a spatially extended cyborg (Mitchell, 2003, p.39).

Mitchell proposes to think of architecture and the urban space of the Twenty First century as a territory that is dynamically constructed through the reticular interaction of mobile bodies, electronic flows and physical spaces: we communicate at a distance through semi-ubiquitous networks -Invisible.

According to the theories of prosthetics and cyborg, which consist of tools as extensions of the body that allow us to interact with the medium, we can see - in the network age - how technological extensions interact at many levels with other subjects, getting to be confused with the territory.

Toyo Ito speaks about this type of cyborgs, proposing to call it the body of the modern electronic movement, being this a body that floats simultaneously between natural and electronic flows, finding us therefore in the search of a house that does not yet exist, a habitat that begins to be visualized without materializing. Here is his longing of no architecture: "A house that, having left its materiality behind, would become floating, the sphere of the living in the midst of the flows, the whirlpool in a river that flows uniformly, pure life" (Ito, 200, p.25-29).

There are many projects in the field of art-science-technology study emerging with new forms of hybrid spaces, through an ethereal architecture within the cybernetic labyrinth in which we currently move. These are projects that deal with the concept of architecture from energy flows and data related to information and communication technologies as well as physical space.

One of the lines of research developed by the Hackitectura.net team is the construction of situations using digital tools that allow the appropriation and re-signification of a space, generally urban; appropriation that is carried out by the inhabitants of the space on which they intervene and, during the action is transformed, becoming a node of the space of flows.

The events consist of connecting to the network the spaces in which it is intervened, with the widest possible band, to use these connections in order to, in real time, receive emissions from different geolocations,

while being broadcast to the network live - streaming / webcasting - what happens locally.

This rhizome of data is projected in the very space where the event happens, giving it a second fluid skin, real / virtual and interactive. At the same time, we built an interactive interface that allows the experience of the event, live and in different ways, on the Web.

The action has, therefore, a double / multiple reality, a local physical one in the geographic place that is configured like a node, and another one, virtual and interactive, in the cyberspace. This set has been called room of the connected crowd. The whole process is carried out with personal computers, work in collaborative networks of distributed competition, low / tech systems and, for the most part, free software.

One example of this is Cartuja Beta Rave, 2003 (Ista de la Cartuja). In the border of the Technopolis of Cartuja, a wireless connection to the Internet was arranged, hacked to one of the buildings of the technology park. Through this connection, audio/video signals - streaming - were broadcast and received, connecting the real-time local space in Seville with other geolocations in Holland, Argentina and El Viso del Alcor. The production of the event was carried out in a cooperative and anti-hierarchical way with the participation of different experts like, among others, members of Lavapiés Wireless, hacklab riereta.net [Barcelona], and the Telenoika audiovisual production groups of Barcelona and Zemos98 of Viso el Alcor [Seville].

The ruin of the abandoned AVE stop at La Cartuja became for some hours a global public space, a temporarily autonomous area that could also be inhabited in cyberspace.



Figure 1. Cartuja Beta Rave, 2003



Figure 2. Cartuja Beta Rave. Graphic with the arrangement of elements in space

A hybrid territory in an uncertain place between the physical-local and the digital-global.This hybrid space is known as one of the spatially extended Cyborg prototypes for the exploration of new existential territories. Architecture, in its most traditional sense, is relevant, but not central.

Similar to this was a project that was built under the title of Emerging Geographies. Emerging Geographies explored unique territorial experiments, starting from a peripheral situation in the European and global context, and becoming central in the contemporary redefinition of the relations between technology, creativity and society.

On the one hand we had Extremadura, a geographical region in the former southeast of the continent, pioneered in the world of free software migration with the LinEx operating system. On the other hand, Latvia, a former Soviet republic in the Baltic, where enormous technical and military installations of the Cold War were recycled for civil, artistic and cultural use.

*Emerging Geographies* investigated the potential of a cultural exchange bridge between Extremadura - the geographical region in the former southeast of the continent, pioneer in the world of free software migration with the LinEx operating system - and Latvia - a former Soviet republic in the Baltic, where enormous technical and military installations of the Cold War were recycled for civil, artistic and cultural use - in this emancipatory, global, fluid, mechanic, futuristic context. It consisted in the installation of a temporary laboratory of artistic and technological experimentation in the exteriors of the dismantled Nuclear Power Plant of Valdecaballeros in Siberia Extremeña (Badajoz).
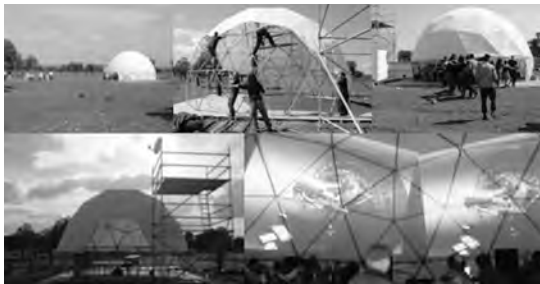
Figure 3. Hackitecturas, *Emerging Geographies*, 2007

The laboratory, which included artists, hackers, free software developers and inhabitants of the region, physically consisted of a geodesic dome equipped with a bidirectional Internet connection via satellite that hosted a series of workshops, round tables and performances. Among the participants: Clausthome (Riga, Latvia), Carl Biosmark (Karosta), Nicolas Henninger (Exyzt), Brian Holmes, Meskalito Nagual, Straddle3, Joseanito Llorente, BeastBox (Lisbon).

Another project encompassed within the term Hackitectura is that of the artist Marco Peljham. Makrolab is an artistic project consisting of a nomadic and energetically autonomous capsule, connected to the Net, conceived as an observatory of migratory, meteorological and digital flows.

Makrolab is able to support the concentrated work of 4 people in isolation conditions for a period of up to 120 days. The initial idea was to get a mobile and autonomous unit that offers technical possibilities to realize scientific-artistic projects. It was presented in the ISEA, with an excellent reception of critics and public. The context added considerable value.

It was one of the star projects of Documenta in Kassel in 1997, possibly the most relevant artistic meeting of the last decade. Makrolab, in which the Slovenian space agency is involved, is an autonomous habitable device connected to the satellite network and local wireless systems, which is moving around the world. In each of its locations - so far Kassel, Australia, North Sea and Venice - the insect-ship has housed a group of scientists and tactical media artists who develop specific projects during their four-month stay in isolation.

The project has to do with three major issues: telecommunications, migrations - in a broad sense - and climatology - all of them related to the flows that travel the globe. Makrolab sees these fields as the territory

that it aims to identify, map, penetrate and investigate, in all ways and directions, during the 10 years of the planned life of the project, from its physical dimensions to its psychic, social, political and artistic dimensions. In 2007, Makrolab was permanently installed in Antarctica as a research station.



Figure 4. Marco Peljha, Mackrolab, 2010



Figure 5. Marco Peljha , Mackrolab, 2010.

Acoustic Space Lab, in the VIRAC radio-telescope in Latvia consisted of the agency of the radio telescope VIRAC with a group of media-artists from Latvia [2001-2003] and is another of the fetishes of urbanism.

The objective in that first acoustic space laboratory was to make accessible the great antennas of espionage and exploration of the cosmos to a group of international media-artists who would try to make a first valuation of alternative potential of the technologies of reception and satellite emissions.

For the most part, those invited were artists/ technologists who experimented in the new fields of sound and digital imaging and in their manipulation in the space of flows. Advised by one of the antenna technicians, and among other activities, activists captured sounds from outer space, intercepted communications

in Europe and directed the antenna to the surrounding environment. All material was recorded for analysis and processing.

The telescope antenna has since become a fetish of the digital crowd, and has in some way served to inspire the development of numerous projects, from activism to research of new media.

In the resulting media / architecture meeting that took place it was discussed, among other issues, the possible applications of the social dynamics of open networks to the creation of new open and public (physical) spaces, the design of processed architectures, and the impact of wireless cartographies and networks on the notions of space/time and social organization. At the same time, experiences/demonstrations of site transformation were carried out through the organization of physical and virtual networks.



Figure 6 y 7. Acoustic Space Lab, 2003.



Figure 8. Acoustic Space Lab, 2003.

In these projects, the contemporary redefinition of the relationship between technology, creativity and society is central. Within them new localities and social groups are becoming new territories of social, cultural, scientific and technological experience, away from the traditional centers of content production, and economic, social and cultural forms.

## Conclusions

Social networks + telematic networks + spaces/ territories are the materials with which it is proposed to produce architectures of flows that are war machines - in the Deleuzian-Guaratinian sense of the term.

Although the conventional architectures of modernity intend to be represented as autonomous objects, in reality, in a broad and critical perspective, it is also necessary to see them as complex arrangements of the current production process, that must be changed by this new thinking and collective work.

From this research, it is considered that one of the ways to investigate possible transformations of architecture is to question not only the architectural devices themselves, but also the whole set of subsystems and the relations that are established between them in the production and the Social consumption of architecture.

## Acknowledgements

## References

Acoustic Space Lab (2016, Septiembre 10).Retrieved from http://acoustic.space.re-lab.net/lab/history.html

Castells. M.(1999) La era de la información. Economía, sociedad y cultura. Vol. 1 *La sociedad red.* Madrid: Alianza Madrid.

Himanen, P. *La ética hacker y el espíritu de la era de la información* (2016, Septiembre 16) Retrieved from http://eprints.rclis.org/12851/1/pekka.pdf

De Soto, P. Hackitectura.net (2016, Mayo 28)Retrieved from:http://www.hackitectura.net/osfavelados/txts/ sci_fi_ geographies.html

Mackrolab (2016, Julio 04) Retrieved from http://ounae.com/makrolab-arte-ciencia markopeljhan/

Michelle, W.(2003) The Cyborg Self and the Networked City. Cambridge: MIT Press.

Pérez de Lama, J.Metapoli (2003) Dictionary of AdvancedArchitecture.City, Technology and Society in theInformation Age. Barcelona: Ed. Actar.

Pérez de Lama, J. (2006) Devenires cíborg. Arquitectura, urbanismoyredesdecomunicación.Sevilla:Universidad de Sevilla.

Serrano, E. Rizoma Fundación(2016, Septiembre 10) Retrieved from: http://rizoma.org/dossier-prensa.html

Stallman, R. (2002) Free Software, Free Society: Selected Essays of Richard M. Stallman. Joshua Gay

Toyo Ito,(2000) Una arquitectura que pide un cuerpo androide.Escritos. Murcia: Colegio.

## Author Biography

Doctor and researcher in the field of Arts, Sciences, Technology and Society (ACTS), is an intermedia artist and teacher at the University of Cuenca, Ecuador.

She completed her master's and doctorate studies at thePolytechnic University of Valencia, in the branch of Visual and Multimedia Arts, her degree in Fine Arts was completed in Barcelona, with honors in Audiovisuals.

Among papers written, it should be noted "Art and Telepresence. Artistic Generation in Collective", published in the research journal ASRI. This article was part of a research project awarded and generated by the University of Cuenca. Other papers include, along with presentation, "The Cybernetic Labyrinth. An experience of neonomadismo ", published in the CEDI, the II Congreso Spanish of Informatics.

In her professional development, she continues to work on issues that address ACTS and collective work, focusing on issues relating to free software and hardware.