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TECHNOPOLITICS IN URBAN REGENERATION CO-CREATING PUBLIC SPACE

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PROCEEDINGS

TECHNOPOLITICS IN URBAN REGENERATION
CO-CREATING PUBLIC SPACE

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FOREWORD

In twenty-first century, urbanization and ecosystems deterioration are affecting cities and their peripheries making them the nexus of mankind's challenges and opportunities. Conventional top-down master planning and municipality policymaking are not delivering the systemic changes needed to improve urban space living conditions for city citizens.

International Conference and Summer School'2019 Technopolitics in Urban Regeneration: Co-creating Public Spaces approached several questions with an argument that cities are a melting pot of new forms of sociability and collective action founded on an association between humans and digital technologies.

The democratization of technology and its ever-increasing influence in our everyday life have amplified new ways in which citizens can access information and make decisions of all kinds. Anyone, anywhere, can design, share, download, adapt and digitally print products. Digital participatory platforms are blurring the boundary lines between short-time design and long-term planning. Geolocation technologies and real-time automated data capture are changing the models of participation and design. In addition, for a space to be authentically public, it must be open, democratic and engageable. Users of public spaces should have the opportunity to activate themselves as agents of change in the contemporary city.

All over the world, community-based initiatives indicate the ability of city citizens to present solutions. In this context, is fundamental to discuss the

progressive emergence of spatialised intelligence.

Digital participatory methods have been developed and experimented in public space design, giving birth to a wide set of opportunities and challenges in cross-disciplinary collaboration. So, what is at the current cutting edge of public spaces design?

To answer these questions, during two weeks participants discussed ways to develop urban solutions based on co-creation processes, giving voice to different stakeholders who can play an important role in the rebuilding of public space on a local scale. Co-Creation to be successful it is important to identify networks and involve different types of participants that can take advantage of effective collaborative partnership. This event opens up opportunities to share international best practice and research, to pinpoint fields of opportunity for actions, and to highlight their importance to the construction of a city.

The two days conference aimed to contribute to enrich the debate around the use of digital technologies in bottom-up urban public space design strategies. The conference is structured in four thematic sessions: (1) Collaboration in digital condition; (2) Civic laboratories; (3) Community Participation and Toolkits; and (4) Digital Collective Mapping. Each session will start with keynote speaker lecture followed by paper presentations sessions.

The design studio takoo place in a real scenario in order to integrate technological knowledge with strategic design concerns.

The four days masterclasses were designed to engage all the participants in an integrated collaborative learning approach to develop an urban design solution in Cascais. The scope is to establish inclusive strategies that link students, researchers, citizens, and municipality with different expertise and increase their ability to deal with the Urban Regeneration and Co-creating design methods for Public Spaces.

PROGRAM

Week 1

Time	MONDAY 24th ISCTE-IUL / EDIFÍCIO 1 AUDITÓRIO MÁRIO MURTEIRA	TUESDAY 25th ISCTE-IUL / EDIFÍCIO 1 AUDITÓRIO MÁRIO MURTEIRA	WEDNESDAY 26th CASCAIS BIBLIOTECA SÃO DOMINGOS DE RANA	THURSDAY 27th CASCAIS BIBLIOTECA SÃO DOMINGOS DE RANA	FRIDAY 28th CASCAIS BIBLIOTECA SÃO DOMINGOS DE RANA	SATURDAY 29th CASCAIS BIBLIOTECA SÃO DOMINGOS DE RANA
8.30-8.45 8.45-9.00	RECEPTION WELCOME					
9.00-11.00	CONFERENCE ECOSSISTEMA URBANO Session 1: Community Participation and public spaces co-creation through toolkits	CONFERENCE FÉLIX STALDER Session 3: Collaboration in digital condition	AUGI: TERRITORIAL MANAGEMENT. AUGI IN CASCAIS Tutor: Cascais Municipality	MAPPING TECHNOPOLITICS ON URBAN PRACTICES Tutor: Carol Farias	MAPPING THE INTANGIBLE HERITAGE Tutors: Alexandra Paio and Laura Pomesano	PARTICIPATORY TOOLKITS + CIVIC LABORATORIES Tutors: Carolina Cardoso e Catarina Graça
11.00-11.15	COOFFE BREAK	COOFFE BREAK				
11.15-13.15	PRESENTATIONS	PRESENTATIONS	SUSTAINABILITY: SDG AND CIRCULAR ECONOMY. TOWARDS AN AUGI Tutor: Vasco Moreira Rato	REAL SCENARIO ACTIVITIES	REAL SCENARIO ACTIVITIES	REAL SCENARIO ACTIVITIES
13.15-14.30	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH
14.30-16.00	CONFERENCE JOSÉ CARLOS MOTA Session 2: How civic laboratories can improve urbanity through collaboration and digital tools?	CONFERENCE ISABEL CARVALHO Session 4: Digital collective mapping through public participation's processes, toward a new territoriality in contemporaneity	REAL SCENARIO ACTIVITIES	REAL SCENARIO ACTIVITIES	REAL SCENARIO ACTIVITIES	REAL SCENARIO ACTIVITIES
16.00-16.15	COOFFE BREAK	COOFFE BREAK				
16.15-18.30	PRESENTATIONS	PRESENTATIONS	REAL SCENARIO ACTIVITIES	STUDIO REVIEW	STUDIO REVIEW	STUDIO REVIEW
18.30 - 22.00	SUNSET PARTY					

Week 2

Time	MONDAY 01th CASCAIS BIBLIOTECA SÃO DOMINGOS DE RANA	TUESDAY 02th CASCAIS BIBLIOTECA SÃO DOMINGOS DE RANA	WEDNESDAY 03th ISCTE-IUL / EDIFÍCIO 2 SALA B 004 / FABI LAB	THURSDAY 04th ISCTE-IUL / EDIFÍCIO 2 SALA B 004 / FABI LAB	FRIDAY 05th ISCTE-IUL / EDIFÍCIO 2 SALA B 004 / FABI LAB	SATURDAY 06th CASCAIS BIBLIOTECA SÃO DOMINGOS DE RANA
9.00-13.15	LABORATORY CO-PRODUCTION	LABORATORY CO-PRODUCTION	LABORATORY CO-PRODUCTION	LABORATORY CO-PRODUCTION	LABORATORY CO-PRODUCTION Conclusions	FINAL PRESENTATION EXHIBITION
13.15-14.30	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH
14.30-18.30	LABORATORY CO-PRODUCTION	LABORATORY CO-PRODUCTION	LABORATORY CO-PRODUCTION	LABORATORY CO-PRODUCTION	LABORATORY CO-PRODUCTION	

COMMUNITY PARTICIPATION AND PUBLIC SPACES CO-CREATION THROUGH TOOLKITS

SESSION 1

A participatory toolkit represents a set of tools that allow anyone of any age to collaborate in the process of creating or transforming a creative process by manipulating 2D or 3D elements. The tools and instructions that integrate the toolkit depend on the purpose and context of the participation goal. These tools provide a creative approach that integrates people throughout the creation process, revealing their needs, experiences, knowledge and desires. The visual approaches enable participants to demonstrate their ideas. In this session, we will discuss a set of topics and tools that can be used in participatory public space design processes.

eu

ECOSISTEMA URBANO

Co founded in 2000 by architects Belinda Tato and Jose Luis Vallejo, Ecosistema Urbano is a design and consulting company operating within the fields o urbanism, architecture, engineering and sociology.

Chair:
Filipa Roseta

Moderator:
Ana Catarina Graça
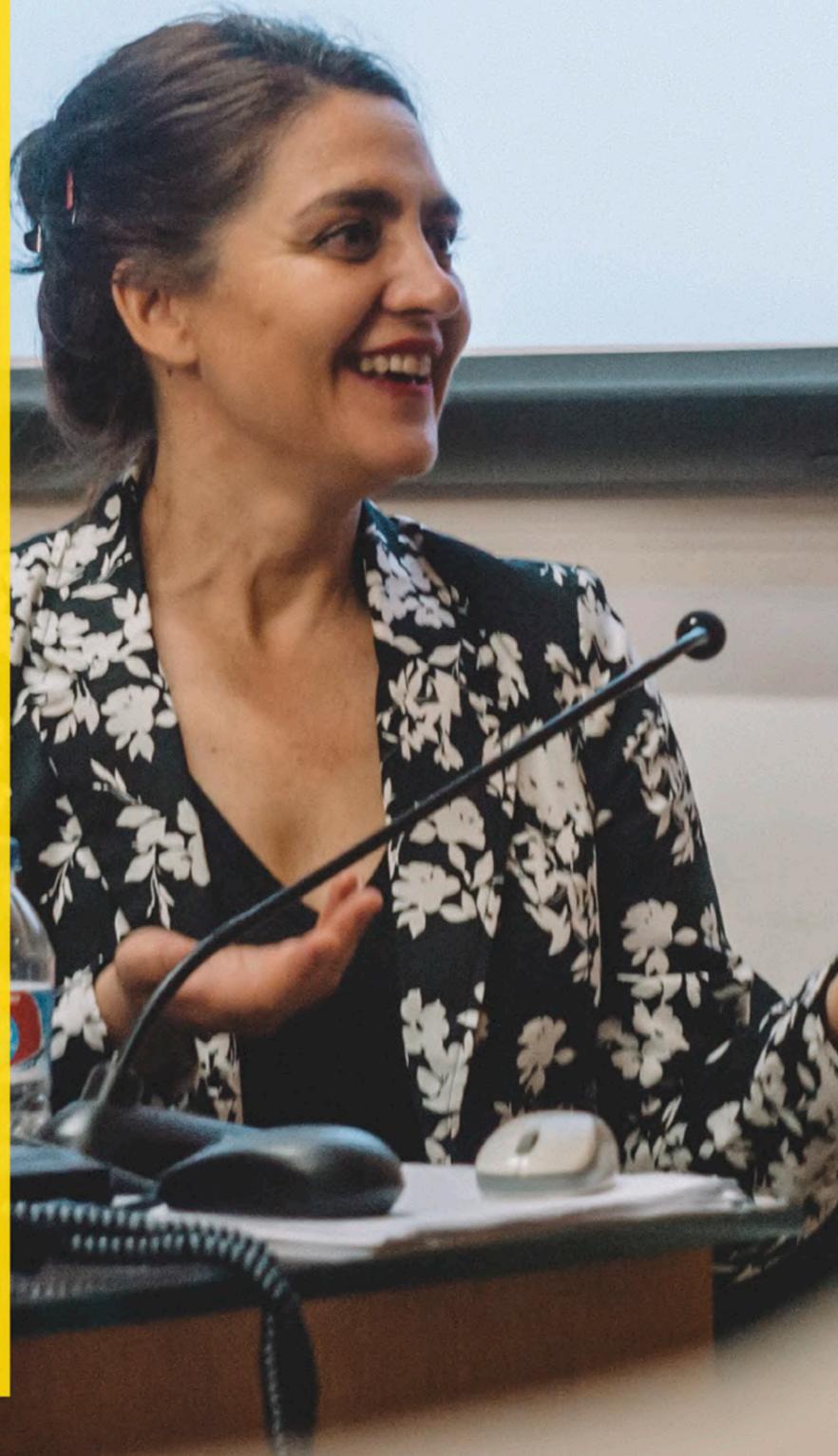
"Urbanism is the mirror in wich the many aspects and layers of society are reflect. Cities were first developed to support basic human activities, but have gradually transformed into complex, envolving living laboratories, where socio-environmental relations are constantly being redefined. (..) Designers need to pay attention to the multiple forces at play in the construction of the territory and ts institutions, as well as the redefinition of the operational processes of architecture, landscape, and urban design practices and research. It is necessary to be aware of our socio-environmental responsibility and promote emergent collaborative forms of government, linking municipal thinking, urban policy, education, and civic engagement.""

Tato, Belinda and Vallejo, José. "Networked Urbanism: Design Thinking Initiatives for a Better Urban Life". Harvard University, 2014

keynote speaker

TUR'19

PRESENTATIONS

Community network design and the potential for co-creation in urban innovation

Ariane de Almeida Mendes, Universidade Federal do Ceará, Fortaleza, Brazil

ABSTRACT

Technology has sped up the growth of cities and transformed the relations in it. The urban resident now moves guided by routes that are pre-defined by algorithms reading big datas in order make the city's flow more efficient and automatized. Time and space have blended and fused while the online life creates new contact networks that shorten the distances while also geotagging our behavioral patterns. The city starts to industrialize its human processes and at the same time urban loneliness becomes a tangible reality expressed in numbers but also in arts and both collective and personal responses.

Design can provide tools to strategically enhance the construction of new urban dynamics with the possibility of directioning planning towards innovations on urban management. When user-oriented, or better yet resident-focused, the design of a collaborative social network has the power to influence conscient use and occupation of the city's physical space as well as integrating and bring new meanings to areas built from the continuous feeding of a rational ecosystem that is co-creative and leads the collective actions of local matters.

Having as fundament the importance of researching basic planning premises based in real and diverse needs, we propose the modelling, prototyping and testing of a community network focused on innovation and aided by both digital technologies and human productive process in order to develop and promote multidisciplinary social ambiental projects. Therefore, popular engagement is a main requirement in understanding the common, public and private. Besides organizing all activities design can add to coordinating different groups united by a unifying goal while helping solve more complex challenges.

Nowadays the speedy urbanization and industrialization for urban areas make it urgent and necessary to create networks that go beyond the digital barriers. The city was always an expression of the interrelations of the human system and its falling victim of the wear and tear caused by the virtual life and the lack of time and disposition for understanding with empathy the necessary changes brought by the passage from analog to virtual. By testing new ways of organizing people we're able to bring about sensorial exchanges that have been lost in between technological advances and stimulate cooperation in commercial and productive processes.

By the belief that the city needs to be designed by people for people we affirm the network structure as a trend in space occupation of the built space. It's important that the groups reclaim their parts as leaders in the making of a city thus being potential the communication and dissemination of methodologies embedded in the urban fabric and the information gathered from collective experimentation and participation. The future arrived looking for new social arrangements and change can now be called disruptive as in the change that separates or interrupts. Creating new approximation webs is a requirement for the future and an urgent need of the present.

KEYWORDS: Innovation; Co-creation; Design; Network

1. INTRODUCTION

By definition the word connection is used to express the act or effect of joining but this meaning acquired a whole new sense and depth after the propagation of Internet. Initially created by military demand, the original idea of the Internet was to develop a network that would make data exchange and storage lighter and quicker. In the geopolitical context of Cold War, the project was intended to be a powerful weapon to mitigate the period's fear and tension, safeguarding communication in a virtual space in case there were threats of territorial confrontations. Nowadays the Internet continues to develop within the limits of this concept as an information system, while also being responsible for large and conflicting transformation to post-modern society, physical, organizational and economical terms.

The ascent of Information Era is marked by visible changes in human interaction. From an industrial perspective, the digital transformation can appear such as automated production process, the breakdown of territorial barriers caused by globalization. The value object moves from tangible to abstract modeling and beyond the virtual world, that transition affects the creation of distinct organizations like companies, governments and cities. Right now the online-life is a reality that brings about discussions on bias consequences in health from micro to macro scale. Going from the concern with individual psychological disturbances to climate changes issues which are symptomatic of the need to pay attention and care for the future through a global perspective.

The advent of computer-mediated communication (CMC) modified the forms of conversation and construction of social grouping. Facebook, Instagram and Twitter reach and bridge people from different backgrounds being a huge example of how groups interact and discuss about important and also trivial subjects. The surge of social media exposes some dialogue difficulties caused, among others reasons, by the anonymity and limitation of textual interaction. Although it shortens spacial distances while enabling multiple simultaneous interactions, social media can be considered a toxic environment from the perspective of data, identity and behavioral security.

Since the beginning, communication was employed as a pilar in the construction of society. Both art

and science use linguistic in various aspects to manifest themselves as ways of thinking. The apprehension of the current range of the Internet is only possible through an understanding of other representation schemes' way of creating dynamic links between conceptual and physical spaces, such as the binary system or rock painting. Artistic and technological processes especially raise questions on how to make these connections visible and accessible through language. The level of difficulty is increased by the volume of easily reached data available on the Web, which provides abundant yet slanted content.

2. LITERATURE REVIEW

The Internet have a massive power of spreading ideas and providing impartial information to people so as they can choose to be a conscious and active agent in the space where they occupy. Particularly in Brazil's case, the majority of the population is digitally unlettered which facilitates the propagation of fake news, hate speech and liberty deprivation. Thus becoming necessary to establish new contact points that perforate and surpass the online interchanges encouraging more inclusive and tolerant relationships. For Zygmunt Bauman, community is based on the image of an island of homely and pleasant tranquility in a sea of turbulence and hostility (Bauman, 2000). Leaving and seizing the virtual, society need the feel of protection to thrive. In urban areas, providing safe spaces and creating a secure environment for area occupation is a pursued goal (Jacobs, 1992).

According to Brazilian Institute of Geography and Statistics (IBGE) in the last demographic census from 2010, the highest percentage of Fortaleza population is composed by Millennials (IBGE, 2017). Although this generation is recognized by its diversity and plurality, there are some characteristics that can be generally perceived such as unattached, connected, unconstrained and idealistic behaviors and attitudes (Gallup, 2016). Looking to understand the needs of this period, where Millennials are impacting economy transforming goals on work and lifestyle, MUDA Network endeavors to reorganize human relations and transmit the concept to different environments, enabling its application in communities, markets and also in public spaces.

The safety problem feeds and is fed by an obsessive preoccupation with the defense of body and property and the construction of a community image as a safe place (Bauman, 2000). Specifically in the case of urban violence, the problem can be approached from different points of view ranging from the amount of people on the streets (Jacobs, 1992) to the conflict in the attempt to divide society into "us" and "them" (Bauman, 2000). MUDA Network proposes that we take a closer look into the deep disbelief in meaningful changes, whether personal or collective, in virtual or real spaces. Thereby the model seeks to discuss the feeling of loneliness in social, political, economic and individual circumstances. Taking in consideration the issues that arise from complexity, designing an organized complex system requires the thoughtful use of diagrams for better memorization and pattern recognition (Vassão, 2010).

This paper studies the design and implementation of MUDA Network inserted in the urban context of Fortaleza city. The tests of actors and relation ties in the formation of groups indicates the potentiality of the model for innovative projects of sociopolitical practices' transformation. Fortaleza is the capital of Ceará, a state of northeastern Brazil, that has been suffering to balance its necessity of more human approach and the demand to become a smart city: considered by Mexican NGO "Seguridad, Justicia y Paz" the seventh most violent city in the world, Fortaleza has a challenge of both supporting the population and providing belonging mechanisms while transforming the metropolis in an inclusive and courageous coexistence. Taking this scenario in consideration, the main objective of this research is to design an affordable, workable and scalable community network for real approximation and social integration in unifying projects. The intention is to expose the concept of alternative organization based in innovation from component sharing and multidisciplinary group formation by making it visible through a graphical analogy.

3. METHODOLOGY

The thought construction starts by the recognizing the existence of pain and anguish since in MUDA Network's mindset restlessness triggers the search for new procedures using known methods of creation. Starting with user-centered focus, MUDA's abstract machine was planned for design thinking methodologies, based on three main not linear mechanisms: problem immersion, co-creation and prototyping (Melo & Abelheira, 2015). All process is aimed at aggregating value to being a collaborator and consequently maintainer of a community network that proposes alternative personal or professional approaches to a common space, prioritizing physical meetings without giving up the facilities provided by digital tools for peer communication.

3.1. Design
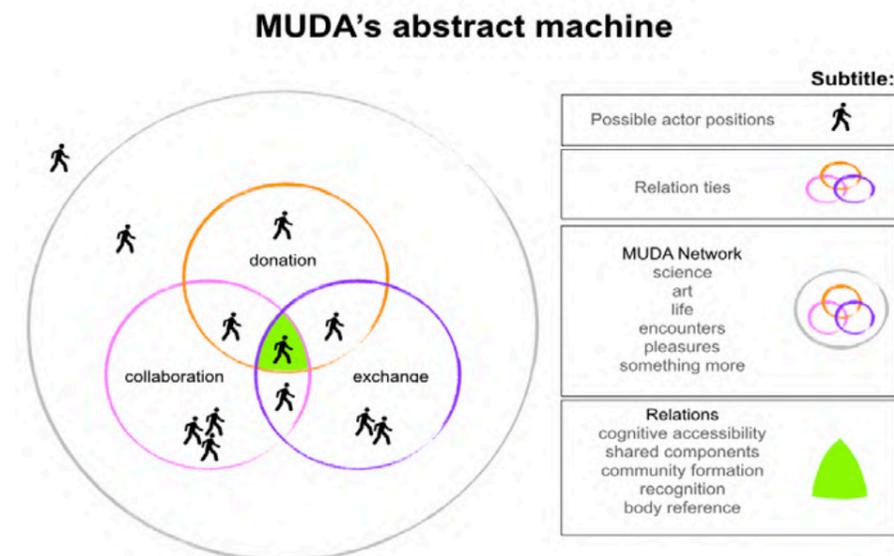
Figure 1:Graphic Analogy of MUDA Network's mechanism designed by autor

The key feature of social network theories or propositions is that they require concepts, definitions and processes in which social units are linked to one another by various relations (Wasserman & Faust, 1994). MUDA's abstract machine (Fig. 1) illustrates donation, exchange and collaboration as relational ties between actors, i.e. people in a group, departments in a company or public sectors in a city. Pairs or trios of actors form subgroups that can interact forming ties among them while still being part of the major group. The relations are expressed through appropriation of free architecture principles: cognitive accessibility, shared components, community formation, recognition and body reference (Vassão, 2010). All these elements consist of a finite set of actors and relations defined on MUDA Network's application and functionality.

The subject is variable according to the group's needs or wishes. Seeking innovation, MUDA Network has "Science", "Art", "Life", "Encounters", "Pleasures" and "Something More" as pillars of self-discussion. In others words, the procedures and final products proposed by the organization embrace the way of thinking as an end in itself, looking for links in real life, encouraging unpretentious meetings, exploring enjoyment in your activities and accepting the beauty of complexity to see others possibilities.

3.2. Tools

Understanding tools as mechanisms to perform or facilitate work, a toolkit for creation and implementation of MUDA Network is constantly developed by the group, based on specific insights that can change if applied in different temporal and territorial contexts. Some techniques used for growing the MUDA's abstract concept is already used in others systems, as exemple of industry and business.

3.2.1. Data visualization

According to Gestalt, simplifying complex images is possible through pattern recognition. Data visualization operates on the cognitive accessibility of all kinds of information circulating within the network. By "Cognition" we mean all mental operations involved in the receiving, storing and processing of information: sensory perception, memory, thinking, learning (Arnheim, 1969).

MUDA Network applies visual thinking to procedures and projects, valuing aesthetics and self expression in heterogeneous languages, mixing art, graphics, data and storytelling to translate the contents in question. This tool is extremely important for connection besides literal explanation, helping to increase communication's power.

3.2.2. Community Management

In the search for disruptive ideas, Larry Keeley (2013) points lack of discipline as the main reason for failure in innovation. Administrating activities, processes, resources and time is a valuable skill for plural organizations (companies, industries, governances) and also for self-conduction. While in tradicional education there's a small investment in creativity, autonomy and leadership, in MUDA Network the role of self-management is a strategic device for regulating the practice and training fresh methods to support decision-making.

Associated with visual thinking, we use planning tools to manage projects. Although visual project has been gaining notoriety from Design Thinking in business models or even in social innovation plans, some optical instruments have been used for a long time in tradicional surroundings, i.e. SWOT Analysis and Kanban Method in industries to map approaches and improve flow system for production.

3.2.3. Co-creation

The principle of co-creating is potentializing experiences and backgrounds from interoperability initiatives putting together mutual skills in a valued outcome. Make people part of something bigger enhances the sense of protagonism in projects of collective manifestation, promoting familiarity and well-being as a human social condition. Playing by agile business models as much as startups and lean applications, co-creation is also expressed in multitask teams that relies in the group's flexibility and plurality to face the speed of modern digital world.

Incorporating data visualization and community management, co-creation uses design methods to create new solutions and stimulate innovative insights through collaborative planning instruments. Brainstorming, Mental Maps and Business Canvas are powerful examples of diversity incorporation in projects. Restoring the art of negotiating shared interests and the idea of "common goods", MUDA's processes are attempts to revert the logic of security search in function of singular desire. Therefore is an opportunity to developed living capabilities and face human plurality.

4. RESULTS

Projects are treated as prototypes, not as final implementable solutions but as tool for learning, teams remain open-minded and receptive during user testing (Kumar, 2012). So even though not all projects reach their initial goals, actors and groups have freedom of decision-making about priorities and strategies to lead their own participation in network. Projects can be mixed, saved for maturation, recaptured and redefined or even combined with other initiatives outside MUDA. Once co-created any first step's manifestation inspired in MUDA's abstract machine itself is a result of the organization's efficiency: a new approach was at least initially from the recognition of the network as a referential of the personal interaction ecology (Vassão, 2010).

Network models may be used to test theories on relational processes or structures and their analysis can also be object of the study process of change within a group over time (Wasserman & Faust, 1994). Fifteen months after the initial manifesto, MUDA's systems are applied in different spheres as bottom-up initiatives, integrating productive forces and developing actions for discuss and construct innovation. For better visualization the projects were separated into themes, but every cluster works using MUDA's abstract machine, even when using different actors, tools or production flows. All network relations described on the design section emerge as patterns to be followed, always stressing the freedom to complete or even increase development techniques. Despite toolkit proposition, procedures can be created by actors in a way to integrate human sensibility into a collaborative know-how.

5. DISCUSSION

A living city needs a combination of welcoming good public spaces and a certain critical mass that want to use it (Gehl, 2010). Even when the debate does not seem to reach urban questions, MUDA

Network use stirs some interesting reflections in the space which is introduced. Most of the cities in the world grow with shocking overpopulation trends and are experiencing high demand for infrastructural, economic and community maintenance as seen in smart, resilient and human cities movements.

From a civil perspective, the concept presented in this paper can help building urban collaborative solutions with a more human dynamics, restoring and expanding the community voice as an essential tool in the construction of public spaces. It's an invite to coexistence, self-discovery and distribution of synergetic efforts to inhabit and own common places, mitigating urban loneliness. Among other advantages, MUDA Network also tests human technologies in and for human productions supporting local commerce, cultural identities and innovative ecosystems.

5.1. Image repercussion

The starting point of cognitive accessibility can be analyzed from the network's brand identity to recognition path for alteration and propagation of collaboration idea respecting the interaction with MUDA Network reference. This calls for creating a vision that can be shared with all stakeholders to guide activities and focus the entire organization's efforts (Kumar, 2012). The image of MUDA Network is naturally promoted by the projects and the actors involved in it. Logo branding assumes different identities according to subject focus and is also utilized to expand graphic representation in community memory through products outcome of network's collaborative creation.

During the studied period, the concept of MUDA involved more than fifty people in about fifteen projects of co-creation that reflect the potentiality for restoring human development in spaces or activities funded by scarce incentives. Actors playing in simplified processes are the supporters for encouraging movement and testing news ways to communicate and direct body image in conceptual grid. Strongly associated with data visualization tools, the study signalizes the urgent need to reinterpret realities under contemporary perspectives, rescue popular expressions and translate complex contexts to resound in formalized structures.

5.2. Reclaiming public spaces

The organization design proposed was adapted to embrace three distinct spaces: Sobrado José Lourenço (a museum in Fortaleza's historic center), Technology Center of Federal University of Ceará and Fortaleza city. Even though it might seem like poorly connected themes, the re-readings follows relation ties, pillars and patterns proposed by tooling use of MUDA's methodology. Besides provoking environmental reflection, projects are used to instigate individual power on territorial scales bringing close contact to collective ground.

Promoting meeting places through social activities, MUDA Network acts against the restrict image of urban planning as a simplifying and rational scenario to conduct obligations. The opportunities to actively participate in events, make eye-to-eye contact, living the unpredictability and surprise of the experience's disposition are advantages offered by the city as a meeting point (Gehl, 2010). The abstract machine's functionalities are fully discussed from the perspective of prosperous urban districts where people feel safe and protected in the streets (Jacobs, 1992).

5.3. Sector integration

Similar graphic analogy are used to represent the intersectional point where strong forces join for creation value. MUDA Network's parallel design puts together technology, people and institutions providing fertile field for innovation so that organizations, spaces and products can be reinvented. The feeling of interdependence among sectors is visible in the variety of spaces that can be reached by the network. Projects are designed and co-created by actors of different academic backgrounds enabling non-obvious connections. As an example, "MUDAcity" is a proposed integration of society, university and government in an urban understanding.

From a macro perspective MUDA Network surpasses barriers incorporating actors from other cities and states, such as Lisboa, São Paulo e Belo Horizonte. Although originally thought as a non-profit organization, the concept has the potential to embrace market contexts and of being easily applicable to culture projects and in collaborative and self-managed environment such as co-working and co-living spaces.

6. CONCLUSION

Collaboration is already used by companies to prototype innovative market solutions. The Network's work focuses on complex problems moving actors to think in innovation actions respecting individual background and level of engagement in a calm welcoming environment for curiosity and creativity. This virtual space works as co-laboratory, a collective atelier to design, co-creating, prototyping, test and research the processes of developing an idea. Traditional work and learning models coming from industrial systems and specific education bring difficulties for co-operating some ideas, revealing the need to support leadership development in self-managed projects. A person can be traditionally educated but in order to discovery a completely different or new way of action she should understand the whole thought mechanism (Krishnamurti, 1973).

Although MUDA is naturally promulgate by the projects and involved actors, it's absolutely necessary think about how to move to action and consequently how to establish effective communication between peers both internally and externally. This gap requires group time, attention and contact for maintenance and constructive dialogues to support initiative needs. Present meetings are encou-

raged to inspire human exchanges and community bonding. Plural investigation in decision-making made by amateur and professional mixed groups enriches the path to the solution, always questioning what the right result means.

Donation, exchange and collaboration have been used in all productive chains encouraging sustainable outcomes based on circular economy. Faced with the previously mentioned scarcity scenario not only in manufacture but in basic supplies, such as water in some Brazilian territories, stimulating creativity is frequently a necessary exercise and an integral part of living in community and questioning immanent instituted orders in organizations and corporations (Vassão, 2010).

In complex systems, inflamed with absolute certainties, this paper has no intention of representing a community network based on fresh relations as optimal solution in an innovative reality. As a matter of fact, all projects both completed and in progress, so far produced more practical questions than answers. A SWOT Analysis (Table 1) was developed from the observation of group behavior in a studied period to demonstrate attention points. Keeping up with its proposal of creating free artistic, scientific and project culture paths, MUDA Network is only a community prototype described by patterns and relations that can be replicated, adapted or used as a reference and inspiration for new contexts.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
multidisciplinarity	self-management's discomfort	complex systems	ideological polarization
collective potentialization	abstract communication	demand for innovation	low investment
participatory decision-making	network maintenance	collaborative strategy	political disbelief

Table 1: SWOT Analysis of MUDA Network designed by autor.

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Cultural and creative collaborative spaces in the revitalization of urban neighborhoods

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ABSTRACT

In recent decades, our cities have been facing profound challenges arising from technological innovations and the intensification of global dynamics. In particular, the transition to a service economy and the increase in flexible forms of work; the emergence of cognitive-cultural capitalism (Scott 2008) due to the importance of knowledge, creativity, and innovation; impose new questions and rethink urban governance.

Since the 1980s, governments have actively promoted the integration of cultural and urban policies into regeneration programs to promote local identity and distinctiveness, enhance the competitiveness and socio-economic development of territories. Over time, urban renewal strategies - supported by local authorities, private investors and/or public-private partnerships - have integrated not only the rehabilitation of deactivated spaces for socio-cultural activities but increasingly to focus on the potential of creative industries as levers for the renewal of disadvantaged or neglected areas.

In addition, there is a growing interest in the people who work in this cultural and creative area as a catalyst for change and innovation. Many of them value lifestyles that provide work-life balance with paid work with non-profit activities. They also seek collaborative spaces (incubators, coworking, fab labs, maker spaces, etc.) that provide flexible and inspiring work experiences, sharing knowledge and leisure opportunities and business.

These collaborative spaces, with different characteristics, which have been installed in various cities, tend to bring new users, behaviors, and investments. Many studies refer to their ability to contribute to the improvement of public space, (re)vitalization of socioeconomic activities, heritage conservation, as well as community empowerment and well-being. However, they can also promote art washing, real estate speculation, and gentrification processes and other problems.

Thus, this working paper is part of ongoing research that tries to identify and understand these dynamics used in the regeneration of the territories through the creation of cultural and creative spaces of collaboration and co-creation as innovative ecosystems which are mobilized and shaped by the complex intertwining relations of production, social life, and the urban environment.

After reviewing some of the main issues discussed in the literature, we purpose a methodological approach and some illustrative case studies that will be explored in the research and that can contribute for a better understanding of the complexity of these urban trends.

KEYWORDS: urban regeneration; cultural and creative activities; collaboration spaces; community.

INTRODUCTION

In recent years, we have been discussing the transformations that technological innovations and intensifying global flows of people, information, capital and goods have produced in our increasingly urbanized societies. Cities and regions are facing changes that are shaping the nature of cultural and socioeconomic relations as a consequence of:

- the decline of traditional industries and the transition to a knowledge-based system of production and services;

- the disappearance of Fordist capitalism and the emergence of cognitive-cultural capitalism (Scott, 2008) as a result of the growing importance of knowledge and creativity inputs and continuum innovation;

- the emergence of more flexible and hybrid forms of work, life and leisure;

- the reformulation and rescaling of urban governance involved in new forms of power and politics.

Since the 1980s, many governments have implemented culture-led regeneration programs to promote the socioeconomic renewal of disadvantaged or neglected areas to increase the livability of their communities and the competitiveness of their cities or regions. Over time, these urban strategies increasingly focus on the cultural and creative industries and their multiplier effects on other sectors and policy areas.

The attraction of people involved in cultural and creative activities has been central in urban regeneration strategies, inspired by the informal displacement of artists and creative communities, documented since the 1960s, to degraded or abandoned areas of the city, in search of more affordable and versatile spaces to work and live (e.g. Boschma & Fritsch, 2009; Florida, 2002, 2005; Griffiths, 1999; Higgs & Cunningham, 2008; A. Markusen, 2006; Ann Markusen & King, 2003). Turned into "bohemian enclaves", these neighborhoods have become very attractive " to "well-heeled" and investors (Currid, 2009, p. 368). As a result, urban planners began to emphasize the ability of newcomers to act as catalysts for innovation and change, the restoration of public spaces, the creation of jobs, and the socio-economic improvement of the places where they settled.

More, the cultural and creative spaces formed by them –such as incubators, coworking spaces, colabs, fablabs, makerspaces, craft ateliers, etc.– have gained a growing popularity as innovative ecosystems with the new socio-economic trends that emerged in recent years and that drive the search for new models based on sustainable and collaborative principles, open innovation, voluntary and

shared provision of resources, among others.

The attention to these new cultural and creative spaces is also associated with:

- expansion of new work arrangements, especially self-employment (OECD, 2016), with the growth of subcontracting and outsourcing services, but also unemployment or precarious work;

- the emergence of a new class of workers in knowledge industries and cultural and creative activities;

- the verification of new life attitudes in younger generations, apparently enthusiastic about flexible and autonomous work experiences, and which pursue the balance between working life and the involvement in non-profit cultural and social activities (Deloitte, 2018).

In the meantime, benefiting from the expansion of digital technologies, various cultural and creative spaces were created around the world, under different models, objectives and spatial scales of intervention. Our interest is particularly centered on the analysis of *cultural and creative collaborative spaces*, i.e. "spaces where groups of people collaboratively promote and manage a mix of creative initiatives in the fields of art and culture, economy and production, social services and urban regeneration" (Franqueira, 2009, p. 35). More than the hard infrastructure, they support "networking, business development and community engagement within the creative, cultural and tech sectors" (Dovey et al., 2016).

In general, these spaces located in renewed and converted places offering shared work and/or factory spaces while organize a variety of activities for different types of users such as events, training, networking sessions, ateliers or residences, etc. Some places are privately owned, with or without institutional support, while others are run by public institutions (e.g. universities, municipalities, libraries, etc.). The most common ambition is to build a dynamic community with a propensity to promote collaborative, open and flexible environments that foster creativity, knowledge transfer and project partnerships (see, for example, Gerdenitsch, Scheel, Andorfer, & Korunka, 2016; Moriset, 2013; Waters-Lynch & Potts, 2017). Moreover, many of these co-creative places promote the engagement of their members in social practices, co-producing services for the community aiming to empower them, namely through artist education and co-creation and design-led methodologies. Besides, artists and creative also frequently explore, reinterpret and expose the territorial capital of place – local identity and histories, collective goods and spaces, relational links, communities' characteristics, etc. enriching their works. "They are natural place-makers who, in the course of making a living, assume a range of civic and entrepreneurial roles that require both collaboration and self-reliance" (Stern & Seifert, 2008).

The discussion about collaborative cultural and creative spaces goes beyond internal processes to discuss the impacts that these dynamics have on neighborhoods, public spaces and the territory. Several studies underline that these dynamics, which bring new users, behaviors, and investments, can contribute to the improvement of public space, heritage conservation, neighborhood socioeco-

nomic revitalization, as well as the empowerment and well-being of local communities. Otherwise, other authors also warn that these can induce, for example, art washing, real estate speculation, and gentrification processes.

Our previous research has also pointed out that although those spaces have flourished in the context of large cities, principally in their central areas, however, they have been spreading to peripheral areas and small cities eager to attract these creative and enterprising. In this sense, it is important to look at the evolution of these dynamics, not only at the level of the big cities but also to develop a comparative analysis with what is happening in other contexts.

This paper is part of ongoing research that seeks to identify and improve understanding about the dynamics around the creation of cultural and creative collaborative spaces in different territories (from large metropolis to peripheral and small urban centers). These projects are mobilized and shaped by complex intertwining relations of production, social life, and the territorial environment. We are particularly interested in those projects which have direct impacts on the territories but especially on the communities where they are located. We aim to discuss the different issues implicated in these processes, for example, the degree of interaction and involvement with residents, companies, and institutions.

MAPPING CULTURAL AND CREATIVE COLLABORATIVE SPACES METHODOLOGICAL APPROACH

Considering Henri Lefebvre theory, this research aims to integrate how the co-creative spaces are organized and used socially; the way that physical space was conceived and changed over time; and the images and meanings associated to experience and appropriation of the space. In Lefebvre's book "Critique of Everyday Life" (Lefebvre 1991, translation of "Critique de la vie quotidienne" 1947), he considers three dimensions of social space: 1) the perceived space – the material spaces of daily life where social production and reproduction occurs; 2) the conceived space – the discourses, signs, and meanings of space that are socially constructed; and 3) the lived space – the material dimension of social life combined with the symbolic experience (Martin & Miller, 2003).

Hence, taking into account these interrelated dimensions. we want to reflect especially about these new spatial and organizational forms, the interactions and practices inside them and surrounding context; the representations of space/community conceived by users, residents, planners, politicians, and others; and the representational space lived through its associated images and symbols (see also Costa & Lopes, 2013). In the analysis of these dimensions, it is used a set of qualitative data collection methods (see table 1 below).

Dimensions	Description	Methods
Material dimension	Natural and built space and the way that it influences and shapes the activities and functions that occur in it	- fieldwork using ethnographic methods (such as direct observation and photo documentation) - analysis of plans, maps, etc. - Interviews - Mental maps
The living dimension	the way the space is experienced and appropriated by its diverse users (residents, workers, artists, visitants, etc.)	
the symbolic dimension	the way it is perceived and represented and how it conditions the experiences and appropriations	

Table 1 Dimensions and methods of analysis. By Author

So, the research started with the exploratory mapping of different cases to better define a typology and then to develop an in-depth case study research to understanding of these places, how they work, the motivations and drivers behind their implementation, how they are organized, which kind of activities they develop and their impact in their surroundings, etc. Furthermore, it is also important to understand how these projects are an expression of glocalization tendencies as means of "the simultaneity – the co-presence – of both universalizing and particularizing tendencies" (Robertson 1995). Many of these are part of more or less formalized networks and different scales where their visitors or members are involved.

In the selection and analysis of case studies we decide to have in consideration the following dimensions (see table 2).

Dimensions	Descriptions
Model	Profit
	Mon-profit
	Mix model
Governance	Association
	Cooperative
	Public-private partnership
	Private owns
	Public ownership
Funding	Private funds
	Grants
	Loans
	Membership
	Tenancies
	Government funding
	Shops
Services	Incubation
	Office workplaces
	Fabric
	Ateliers
	Residences
	Gallery
Location	Inner city
	Peripheral
	Rural area

TUR'19

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Regular activities	Training
	Cultural events
	Networking events
	Open days
	Social projects
Main focus	Cultural and creative industries entrepreneurship
	Social innovation
	Cultural development
Main operators	Remote workers
	Artists
	Freelancers
	Startups
	Small business
Community Outreach	Vocational placements for young people
	Free training and workshops for community
	Hosting community events and meetings
	Open days

Table 2 Description of the main dimensions of analysis. By Author

The case studies selected briefly present subsequently correspond to a range of models and geographical locations where we are developing our empirical research. The option for a case study methodology stems from the interest in more interpretive approaches to urban phenomena (Bennett, 2004; Gerring, 2007; Tomaz, 2013) through thick narratives (Geertz, 1973).

A. FABLAB LISBOA

It is a laboratory of digital manufacture and prototyping developed by the municipality of Lisbon in the reconverted Mercado do Forno do Tijolo, in Anjos neighborhood, as part of a broader the City strategy in favor of innovation and entrepreneurship. It aims to support the creativity and development of each person who wants to develop its own project or to build collaborative projects with oth-

er "makers", not only through access to equipment (such as laser and vinyl cutter machines, 3D printer, small milling machine, hot wire cutter, etc.) but also providing forms for knowledge exchange, for instance, with the organization of workshops or support links with other production facilities, startups, local universities and schools.

More, as stated by the City Hall "The FabLab Lisboa is thought to function as a 'think-tank' where designers, developers, students, and other actors gather to develop projects for the local community" (http://www.comvort.com/wp-content/uploads/2014/06/Dr-Carvalho-LISBON_Economy-Innovation-Entrepreneurship.pdf.pdf).

Fablab has promoted partnerships for social inclusion and employment in the field of cultural and creative industries, for example, with the Mouraria Innovation Center. It has been part of the dynamics that have gradually come to change the neighborhood of Arroios, that increasingly assumes itself as a pole of cultural attraction.

B. HANGAR - ARTISTIC RESEARCH CENTER

This independent center for artistic research, located in Graça neighborhood, in Lisbon is run by the non-profit cultural association called XEREM of artists and curators. It includes a center of exhibitions, artistic residencies, and artistic studies. It is also a center of education, talks, and conversations that stimulate the experimentation, research, and reflection artistic practices. HANGAR aims to encourage artistic interaction and exploration of the urban environment and contact with the community and comprehensive artistic context. Besides, it develops international artistic residencies, network exchanges of artists, and other cultural actors. It consists of the creation of a platform for cooperation between artists and various sectors and public and private institutions for artistic, cultural, local and international development.

It will launch a coworking space for artists, researchers, freelancers professionals and independent cultural projects with an analogic photographic studio and other equipment.

It has the support of several strategic partnerships include the City Hall Local Partnerships BipZip program (a municipality program which supports local partnerships and/or interventions in so-called "priority intervention" areas or neighborhoods pointed out as highly vulnerable areas).

C. BUINHO, FABLAB AND CREATIVE RESIDENCY

Buinho is a nonprofit cultural organization created in 2015 in the historic town of Messejana, Southern Portugal, with the intention of be an inspiring place for creativity, collaboration, and innovation. It is the first MIT certified fablab for the Southern region of Alentejo and one of the first Portuguese rural fablabs. It comprises a collaborative creative studio, fablab and maker space (equipped with

workstations, laser cutter, 3D printers, CNC's, vinyl cutters, etc.) to support the experimentation of artists, designers, engineers, researchers, and entrepreneurs.

It develops a creative residency program with private accommodation and shared work-spaces for creatives and researchers from different backgrounds (painting, drawing, sculpture, new media, design, writer, curators, among others). The residencies are process-based, allowing visiting artists to develop projects in a unique work ambiance and the immersion in the quotidian of this rural town of Alentejo region, a community with a strong sense of identity and rich heritage.

They also coordinated the Playground program focused on social design projects, which enables the artists in residence to engage in with the residents. Most activities are dedicated to children and young people, however also provides new activities, equipment and space renovations to a set of local institutions and informal groups. Recently in collaboration with the local municipality, the Buinho team is working with residents and the local community in plastic recycling projects linked to

art projects, learning, and social sharing.

E. GREAT GOOD PLACE

This project starts with the development of collaborative design methodologies, through the activation of physical spaces, but also the improving of an environment of sharing ideas, resources, skills, knowledge, etc. The Great Good Place is the third project developed in Portugal by the developers of the Colab methodology that originated a research group called Silo, which focused on the future issues of the work. It is a "participatory learning approach to collaboration and Komuhn (read: common) - the bossless team designing and building ideas towards impacting the world in a positive way" (http://www.dinamo10.net/in/comunidad/pedro-reis). The implementation of a pilot project made it possible to explore this concept in a building requalified by the municipality of Óbidos, which gave them the facilities. The space intends to activate a community in a low-density rural region through informal incubation of projects to enhance or improve business, enterprise, and product development. They are currently developing a new participatory design project in Peniche, Portugal - a small coastal community. The project began by detecting unused spaces where they could start prototyping some reactivation and requalification projects, for example, a coworking space, an open maker-space, a library of things, marketplace, etc. and the establishment of various partnerships. The main objective is to create a community of active participants that contribute positively to the territory.

F. UNDERGROUND VILLAGE LISBON

The Underground Village Lisbon opened in 2014, in addition to the coworking space is a hub for creativity and culture that marks the landscape of Lisbon. The Village Underground concept, a co-

working space, was created by Tom Foxcroft in London in 2007 as a way to bring friends together to reduce work expenses. After having occupied a space in the London version, Mariana Duarte Silva wanted to bring the concept to Portugal. Built on the grounds of Carris Museum in Alcântara, it brings together several container workspaces and a restaurant on an old Carris bus that follows the principle of reuse of equipment. Feature an event room with concerts, theater, and exhibition of new talent, a recording studio, which is chosen by many musicians to make artistic residences and record, and has transformed into an open gallery of street art. Since the start, many people have been involved in the arts and creative industries, such as theater or music, who have settled here. Today, 40 people workers there permanently, divided between small companies and freelancers, being 60% Portuguese and 40% foreign.

It presents a regular cultural program, with more than 30 pieces of national and foreign artists. Besides, on Fridays, from 6 pm, there are happy hours, with free admission.

FINAL THOUGHTS

A literature review was carried out to identify a set of key issues for the analysis of these dynamics which reveals the complexity of the phenomenon and the necessity to proceed to more accurate research. Then, as part of the exploratory phase of the ongoing research, it is presented a set of case studies that have distinct features and locations and emerge from different socio-economic contexts with distinct implications to the territories. This exploratory phase aims to point some important issues to a better understanding of the complexity of the phenomena, although not provide yet conclusive results. In this intention, field investigations are being carried out through direct observation, semi-directive interviews, and ethnographic data fulfillment.

All these projects under observation have, or aim to have, a transforming role in the territories and in community daily lives. This potential is recognized by public authorities and other institutions that support more and more this kind of space, aware of the changes that artists and creatives can bring. However, the real and long-term impacts of the cultural and creative collaborative projects have to be examined more deeply and in order to understand if the results arise from their particular features or from the context in which they intervene.

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Cooperative tools for the city co-production and co-governance: what are they and how they can democratize public spaces

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ABSTRACT

Many groups and governments across the globe now want to promote effective cooperation between bottom-up and top-down urban practices in order to co-manage urban commons and test new forms of governance. In particular, there have been numerous experiences with the temporary use of open public spaces, such as parks, streets and squares, in which the idea of urban experimentation is to counteract the lack of flexibility of traditional urban planning and design of public spaces – a rigidness that often leads to failure due to the misunderstanding of the needs of users. It involves promoting proximity in urban planning and governance, fostering social planning around small projects, and analyzing the evolution of the territory performance, of its contradictions and conflicts that are not always visible. Considering this, understanding how different urban actors can cooperate to improve the quality of life in large cities is certainly one of today's biggest challenges. There are cities that have advanced in the theme, developing tools that combine local development with co-production and co-governance. This paper will present three of them, from Lisbon (BIP/ZIP), Bologna (Bologna Regulation) and Madrid (Decide/Coopera Madrid). Those cooperation tools, in spite of having a different operation – some are rooted in regulations, like Bologna, or combine regulations with online platforms, like Madrid, and others are municipal programs, like Lisbon – have in common that they recognize the agency of the aforementioned creative urban practices and all enable cooperation agreements between the local public administration and citizens resulting in formal co-governance local processes of neighbourhoods' qualification, care and regeneration. Through active participation of various actors within the public administration and among citizens, these experiments co-produce the space in which they are developed, socially and/or physically, by distributing power in the local scale. This paper aims at introducing some reflections about how each of the aforementioned policies makes evident the cities' co-production potential as the 'cooperative tools for the city co-production and co-governance' are conceptualized. The points presented are the result of visits to the mentioned cities, where interviews with public administrators linked not only to the creation of these tools but also to their implementation were made. Other stakeholders related to these cooperation tools were also interviewed. Material about these tools, as well as their own texts, were also examined, in addition to the related literature review. In every city some projects benefiting from these tools were analyzed in depth. The intention of understanding the common points and variables of co-operation tools, based on the chosen cases, is that this could collaborate with the collective building of viable organizational models of scalable impact that envision the active role of citizens in city-making, bringing new knowledge and reflection to urban scholars interested or involved in public policies development and evaluation.

INTRODUCTION

Since the 2000s, the movements of 'reclaim and occupy the cities' have been present in many great cities around the world, fighting for cities produced collectively, searching for social and spatial justice. The Lefebvrian motto of the "right to the city" was brought to light again, the citizen who uses urban space claims the right to participate in its construction. The appropriation of the 'right to the city' as a political proposal for change, and as an alternative to the urban living conditions created by the current policies, has also occurred through urban practices that appropriate public spaces, which build, based on its' co-production and everyday use, the city as *a point of encounter for collective life* (Lefebvre,1972), or as an urban common itself.

The 'Bologna Regulation', one cooperative tool that will be subsequently approached in this paper, define urban commons as the goods, tangible, intangible and digital, that citizens and the Administration, also through participative and deliberative procedures, recognize to be functional to the individual and collective wellbeing.

There are examples in many of the global metropolis of these urban practices that were born, multiplied or strengthened in this period. There were several attempts of these collectives of urban practitioners to move from public spaces' temporary uses to more stable co-production models; however, the development or implementation of a satisfactory co-governance framework has not been possible. One of them is 'El Campo de Cebada'. In 2010 the community of La Latina neighborhood in Madrid got together to discuss uses for land on which public equipment was to be built and which had been unused for years. Neighbors came together to activate the space in the most participatory way possible, making it a meeting point for local residents, where people could hang out, play games, practice sports, watch movies, or simply meet and talk. Another example took place in São Paulo. *A Batata Precisa de Você* promoted the regular occupation of Largo da Batata, a 29 thousand square meters square in the Pinheiros neighborhood. The Largo da Batata is a Square that was redeveloped during ten years incurring very high financial costs to the municipal administration. When the square was finally open to the public, at 2013, it seemed a desert, without trees nor street furniture. During almost two years people gathered weekly in the square promoting cultural and leisure activities, and

building and maintaining temporary furniture, co-producing the space informally and actively.

In these described cases, as well as other several cases that relate to those, there were attempts to move from public spaces' temporary uses to more stable and formal co-production models; however, the development or implementation of a satisfactory co-governance framework has not been possible.

In this context, the search for models that foster symmetrical cooperation and partnerships between citizens, institutions and public authorities is a topic increasingly discussed by practitioners and researchers, how co-production of place and knowledge is being executed by local groups (Mitlin,2018; Watson,2014; Albrechts,2013) which means of legitimacy are used to get their voice heard (Santos & Rodríguez-Garavito,2005; Fung & Wright,2001) and how is the process of conquering the co-governance of local urban commons (Iaione,2012; Appadurai,2001).

The informal practice of place co-production in the case of 'El Campo de Cebada' and 'A Batata Precisa de Você' has always been characterized by a close contact with the municipal public administration in search for cooperative solutions to maintain the involvement of the citizens not only in the immediate management of space, but also for the recognition of their agency and local value in longer term.

These co-production practices lie rather critically to a bottom-up city management model. *Top-down* approaches are based on traditional governance structures, and focus on the analysis of management systems and hierarchy of management. Thus, resulting policies would be implemented *top-down* by agents in accordance with those goals.

In *top-down* models, decisions are made by a central level of government and implemented by a local level. There is an understanding that decision and implementation are distinct processes. In *bottom-up* models, the decision and implementation of public policies must originate in a level of decision closer to the population, involving a wide negotiation process between the local public administration, people that work in the delivery of these services, and the population itself. In this case, policies are the result of the interaction of a network of actors. The term *bottom-up* has also been commonly used to refer to actions taken by civil society from a local scale. (Finally, it is worth noting that in addition to the basic models of implementation, the literature suffers from other displacements that give even greater complexity in understanding the process of producing '*top down*' or '*bottom-up*' public policies.)

In these situations co-production of a place can be also acknowledged as co-production of knowledge, as it is about the empowerment of local groups – local communities – which strengthens their negotiating power vis-à-vis the state, and are closely linked to the place co-governance, that being a multi-stakeholder approach to the management of urban commons based on resource pooling and cooperation among the actors as citizens, social innovators, public authorities, businesses, civil society organizations, and knowledge institutions.

Some local governments responded to the demand from initiatives such as those presented, developing public policies that enable citizens to have a deliberative role in the decision-making process regarding the use of public spaces. These policies allow public administrations to be more 'permeable' and thus able to exchange knowledge and cooperate with citizens. They foster active citizenship and give citizens the opportunity to develop their political capacity, as they make possible the evolution from self-organized appropriation of spaces to a model of co-governance within a permitting institutional framework.

Three of these cases will be presented in this text – Lisbon (BIP/ZIP), Bologna (Bologna Regulation) and Madrid (Decide/Coopera Madrid). These policies are in the field of territorial cohesion and citizen participation. BIP/ZIP main objective is to foster the attitude of active citizenship in which it helps to integrate more vulnerable neighborhoods to the urban fabric. It also won prizes as a policy of citizen participation. The 'Bologna Regulation' is a public policy of citizen participation and collaboration, locating itself as policy that was built for the government innovation. 'Decide Madrid' was born as a transparency, participation and open-government policy that together with 'Coopera Madrid' turned also into a local development policy.

These tools play the role of supporting active citizens to transform ideas into deliverable projects, levying adequate funds, developing a plan and establishing the right organizational model. They are all hybrid policies that get together in a in a field of public policies that articulates the social participation to local territorial development, in the form of public-social cooperation.

The 'public-social cooperation' model is described in the Public-Social Ordinance of Madrid as a cooperation in which the administration act jointly with the active citizens to achieve a common goal of public interest.

> In complex societies, subject to constant changes, such as Madrid, effective and efficient management of public affairs requires a way of governing relations, closer and more attentive to the needs and problems of citizens and more open to solutions what citizens create to improve their collective conditions of life. As a consequence, a public management model based on a permanent dialogue with society must be applied through positive actions aimed at promoting its articulation, promoting its protagonism and establishing different forms of collaboration and co-production of public policies.

> Thus, the City wants, through this public-social cooperation ordinance, to accommodate the social initiative in the approach, development and execution of activities or non-public benefits that, being of interest to the City, report a benefit to the whole

the society of Madrid, establishing a stable and transparent framework for cooperation with the group of non-profit groups and citizen entities of the city. This framework should favor the co-production of public policies, the realization of activities of public interest and the structuring and strengthening of the 'associative fabric' of the city through the promotion of cooperation dynamics, without influencing, at any time, the autonomy of the participating entities and groups. In addition, it promotes citizen participation in the care of common goods through co-management and self-management formulas. (The Public-Social Cooperation Ordinance of the City of Madrid, 2018).

PROCESS

This paper intends to share in an incipient way the processes and results of an ongoing research that intends to understand, within the framework of these policies, whether those policies inaugurate or contribute to new ways of political education and power relations.

This research began with my involvement in the creation of 'A Batata Precisa de Você', and the connection with other collectives that had convergent goals and action, both in the city of São Paulo and in other cities around the world.

During the years 2014, 2015 and 2016 there were many exchanges between these groups, and mutual visits to their spaces of action.

I followed closely the process of when these groups - mainly in São Paulo and Madrid - organized themselves to reclaim a legal framework that recognized their agency and their requisitions with a direct impact on the regional action plan.

From 2017 this research has been undertaken focusing on the public policies that developed from these demands, mainly in Europe. Processes that seemed to respond to the demands of the population of co-production of the city in the form of models of public-social cooperation were investigated.

The research methods used were mainly qualitative, such as fieldwork, observing activities of interest, in-depth interviewing key-actors - public administrators, active citizens, neighbors, recording field notes and observations, participating in participant observation and secondary data analysis.

These were applied in a structured manner in Lisbon, in relation to the BIP/ZIP, in Madrid, in relation to Public-Social Ordinance and its connection with Decide Madrid, and in Bologna, in relation to the so-called 'Bologna Regulation'. Some of the analysis of what was collected is being shared in this paper.

Further research is being conducted following the progress of these policies and its impact, also their transfer to other cities, concentrating on the case of BIP/ZIP.

THE BIP/ZIP

The BIP/ZIP local development strategy is composed of a set of tools to promote local development, foster active citizenship, boost the capacity for self-organisation, and encourage the collective search for solutions through the participation of the population in improving their living conditions. The objective is to contribute, through technical collaboration and financial support, to an effective improvement of the deprived territories and communities in order to allow and reinforce their integration to the city, halting discrimination in the access to goods and services.

The first step of the BIP/ZIP strategy, back in 2010, was to develop a BIP/ZIP map: a municipal political instrument that identifies territorial priorities in the city. The name BIP/ZIP is an acronym for 'priority intervention neighborhoods and zones'. The main concept for mapping these zones was to identify areas and neighborhoods lacking minimal levels of cohesion in terms of urban, socioeconomic and environmental conditions as well as lacking connection between the voices of the local citizens and the local authorities.

Statistical information about social, economic, urban and environmental factors were collected, and the city's social and territorial fractures identified and mapped. Priority in urban development was given to 67 neighborhoods across the city, thus classified as BIP/ZIP. Approximately one-third of the city's population lives in deprived or BIP/ZIP areas.

This mapping process resulted in two programmes: the Local Partnerships Programme and the GA-BIPs – Gabinetes de Apoio ao Bairro de Intervenção Prioritária, or 'Local Offices for Support to Priority Intervention Neighborhoods'.

The Local Partnerships Programme provides funding and technical support to small projects of public interest to be developed in the BIP/ZIP areas by networks of local initiatives and non-profit organizations. Local organizations carry out the analysis of a local problem, develop partnerships, define objectives and activities, and create a framework and timescale. The budget for each project is up to 50,000 euros a year (the total budget is around 1.6 million euros per year), which is to be managed by the main partner of the project. The BIP/ZIP team follows the implementation steps closely, organizing a network of key services to support and cooperate with the proponents so that the project is properly implemented.

The entities that can apply as promoting partners – through an online application process or the locally elected Borough Council – are local non-profit organizations and locally elected Borough Councils, which function as executive district supervisors. It is required that at least two organizations apply together – for networking and mutual strengthening – one of which may be the local Borough Council itself (which can be the promoter or a partner). Informal groups can also participate in the programme as long as they partner with formal organizations. In many cases, organizations in the

same territory do not interact or have a scant connection with the local population.

The Programme has different categories in which proponents can compete and also several fields, for example, promotion of citizenship, intervention in the public space, or improvement of the quality of the neighborhood. As a result, the developed initiatives are very diverse, ranging from culture to sports and social projects: community gardens, skate parks, renovation of squares, mobile libraries, prevention of domestic violence, and shared management of local parks.

The funding is for one year – and projects have to deliver a final report at the end of this period – but the initiatives have to demonstrate a two-year sustainability plan in advance.

The GABIPs offer a network of services committed towards horizontal work between the municipality and citizens, innovating in public service. It steers initiatives, investment and regeneration for the neighborhoods. They are local structures for co-governance that promote partnerships, maintaining an executive committee with key local stakeholders of the urban regeneration process such as local authorities and associations as well as a coordinator from the municipality. Their composition depends on the technical, urban, social, environmental, cultural, and educational aspects of the projects. Officials from many municipal departments can take part. The GABIPs function as a fast track between the municipality and the community, as they push decision-making to the local scale and share it with local actors.

Also, the Lisbon' Community-Led Local Development (CLLD), known as Rede DLBC, was created. It is a bottom-up co-governance network focusing on funding and training local grassroots organizations to collaborate with institutions for Local Development, developing a global strategy for BIP/ZIP territories and shares previous experiences to enhance the skills of local partners.

These cooperation tools allow and support the involvement of the communities themselves in the process of improving their quality of life. They do so with in a transparent manner and relying on participatory processes and co-realization.

THE BOLOGNA ORDINANCE

The Regulation for the Care and Regeneration of Urban Commons, also known as the 'Bologna Regulation', is a regulatory framework that actively invites ordinary citizens and neighborhoods to protect and improve their own urban commons, with the active assistance from the government. It understands the city's residents as resourceful, imaginative agents in their own right. By the agency of this instrument, citizens – whether as individuals or organized into informal or formal groups – can propose to take care of the common goods of the city. Instead of merely going to the municipality to complain, citizens are encouraged to be part of the solution, acting in collaboration with the public administration. Through 'pacts of collaboration', the city and citizens agree on an intervention to care for and regenerate urban commons (green spaces, abandoned buildings, squares), in cases where

the intervention of citizens requires the collaboration or responds to the solicitation of the city. This collaboration can take place in diverse ways, from the assigning of spaces to technical advice, training, improvements in spaces, and, in fewer cases, financial support.

"There were people who wanted to collaborate in the maintenance and improvement of the common goods of the city, but the instruments that existed before were inadequate and complicated. In fact, we were not ready for another logic, one in which the citizen is not only a recipient in relation to the administration but rather someone who may have an active role in municipal actions." Donato Di Memmo, head of Bologna's Third Sector and Active Citizenship Unit, which is in charge of the 'Bologna Regulation' (in Sobral, 2019)

As the municipality's view of its citizens evolved from passive recipients of services to active co-managers of the resources they use in cities, the city of Bologna now regards citizen initiative and collaboration as under-leveraged energies that – with proper government cooperation – can be recognized and given space to work.

The Regulation (approved in 2014) in line with the provisions of the Italian Constitution and the Municipal Statute, governs the forms of collaboration between citizens and the City of Bologna for the care and regeneration of urban commons; its central regulatory tool is the collaboration pact of collaboration.

The key tool supporting the regulation are the "collaboration pacts", which defines the specific commons in question and the rules for collaboration between stakeholders, including the city government. Collaboration pacts can be proposed and signed by a single individual, informal groups, communities, and nonprofit organizations. They regulate both single, short-term interventions and long-term care of the urban commons. The Regulation also fosters the creation of local institutions for urban co-governance such as community cooperatives and neighborhood foundations.

The Regulation provides for the transfer of technical and monetary support from the city government to citizens. It also promotes citizen action in five categories: social innovation and collaborative services; urban creativity; digital innovation; collaborative communication; and collaborative tools and practices that foster urban commoning. Among the projects are a kindergarten run by parents, an urban agricultural coop and a waste reduction effort by a group of neighbors.

THE MADRID'S PUBLIC-SOCIAL ORDINANCE

The Public-Social Cooperation Ordinance of the City of Madrid ('Ordenanza de Cooperación Público-Social del Ayuntamiento de Madrid') is an instrument that standardizes the processes in relation to all existing cooperation, benefiting communication and transparency; it also proposes the opening of more possibilities in the form of future public calls. To this end, public-social cooperation is understood as the different forms of collaboration between citizens, entities and non-profit-making civic

groups, on one hand, and the Madrid City Council and its public bodies, on the other hand, for the development of activities of common interest and general benefit.

Formalized in July 2018, the Ordinance gives legal support to the virtual platform 'Coopera Madrid', which officialises Madrid as a city that values a public management model based on permanent dialogue with society. This dialogue is applied through positive actions that aim at promoting citizen protagonism and establishing different forms of collaboration and co-production of public policies.

The Ordinance is a new legal framework that allows citizen entities and citizenship in general to develop projects in cooperation with the municipality. It was created by compiling all pre-existing legal instruments of this type and organizing their content in the Ordinance. Some of the instruments of cooperation added through the Ordinance are the Agreements between the municipality and Civil Society and the patrimonial instruments of temporary assignment of public spaces.

The public-social cooperation regulated by the Ordinance can be realized via two paths: citizens' initiatives arising from their use one of the existing municipal listening channels (such as Decide Madrid) to propose their idea; or a public call created to meet the need of some municipal sector. For example, a district can make an open call for projects of public-social cooperation to receive proposals directly from citizens. Any municipal body can develop a public-social cooperation project and the budget can also come from any of them.

Proposers and participants may be organized as non-profit organizations, such as Associations, Federations of Associations and Foundations. Collectives – groups which have no legal status but are registered with the City Council – are also eligible.

Some examples of existing collaborations that have been regulated through the new Ordinance are the community gardens, the permit for public space management by citizen groups and a network of self-managed leisure spaces for teenagers.

The creation of the Ordinance recognizes the urgency of moving from deciding or voting in an assembly to actually cooperating with the administration in the process of implementation and governance of projects of common interest, converting dispersed cooperation possibilities into a local public policy.

COOPERATION TOOLS CONCEPTUALIZATION

Although each of these experiments differs from the others in its ambition, scope, and concrete aims, they all share surprising similarities in their motivating principles and impact.

They were all created when cities have gone through similar processes with regard to organized groups of active citizens that demand to have a deliberative role regarding local public spaces or equipment, and a local government that decides that the alternative would not to informally stretch-

ing the existent rule, but to co-create a new rule that responds to the demand, whether in the form of an urban instrument – which can be linked to the city's master plan or not – or in the form of municipal legislation. As a result, these experiments, these policies, these tools, strength the local 'associative fabric', empowering citizens regarding political decisions of their concern and interest through deliberative democratic action. Local power relations are reconfigured, insofar as the city is co-produced.

The BIP/ZIP, the Madrid's Ordinance and the Bologna Regulation may have enough in common to warrant describing them as a category of tools that can be expanded both horizontally— into other urban policy areas — and vertically —into higher and lower levels of institutional and social life. I assert that they do, and name that category 'cooperative tools for the city co-production and co-governance'.

I thus begin, tentatively and abstractly, to sketch "cooperation tools" by pointing out three general principles that are fundamental to all these experiments: (1) practical orientation towards local bottom-up problem-solving (2) involvement of multiple local actors and the municipality in a deliberative process and (3) co-production of citizens proposals through agreement-based approaches, with the subsequent co-governance of a place.

There were found background conditions necessary for these tools to contribute to the realization of democratic values. Some of the enabling conditions that can facilitate or impede the progress of these cooperative tools are (1) appropriate local organizations/groups of citizens to promote the required social capital needed for co-production and co-governance, (2) politicians to support the contestation of professional roles (after recognizing that professionals may be uncomfortable with greater citizen involvement), (3) reform-minded bureaucrat in holding a decision-making position in the City Council who reflect a new type of governing that privileged accessibility, flexibility and negotiation, and(4) capable and well-financed state apparatus that can actually respond to popular demands and participation, with a transparent process through which neighborhoods could obtain access to government infrastructure and services.

CONCLUSION

City governments are on the front line of citizen demands, so an important part of their work focuses on addressing everyday immediate and pressing issues, such as backlogs in infrastructure and service provision, poor quality housing, land tenure problems, social emergencies, and problematic public spaces. Usually solutions given to these problems have been narrowly focused, with little coordination between areas, and superposition of actions. There is a need to develop and encourage mechanisms for enhanced engagement with all local actors, hear and understand what people are doing, how and with what capacities, thus exploring how to reach local power distribution regarding daily city-making. Enhancing the capacities of all local actors, both of local government teams and

citizens, and developing agreement-based approaches is of paramount importance for the building of socio-spatial justice in cities.

The cooperation tools in this paper conceptualized represent a management method that is effectual in the rationalization of city management processes, putting citizens in deliberative decision-making role, defining time by time the engagement rules and identifying the responsibilities of the different urban actors involved. They strengthen local players and place public administrations as facilitators of processes (transformations, regenerations, requalification, safeguard operations, etc.) including a growing part of citizens. The spread of governance forms based on the subscription of different types of agreement-based approaches – in which participants listen to each other's positions and generate group choices after due consideration – could represent the trigger to promote the birth of fairer power relations in the production and governance processes of cities.

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Academic experiences in participatory urban analysis and co-design of public space

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ABSTRACT

Citizen participation is today a key element in urban planning its importance and the benefits of its incorporation in the different areas and scales of urban planning is no longer in dispute.

In October 2016, in Habitat III, United Nations Conference on Housing and Sustainable Development, a New Urban Agenda was approved, NUA, which reaffirms the global commitment to sustainable urban development and contributes to the implementation and integrated localization of the 2030 Agenda for Sustainable Development and the achievement of the Sustainable Development Goals. *"A city in which the free participation of all its inhabitants is promoted, generating a sense of non-exclusive belonging that improves social cohesion and cultural interactions as the basis of plural, multicultural and living societies"* NAU ...

At the national level, one of the 12 principles of the National Urban Development Policy enacted in Chile in 2014 is Participation: "decisions must be made with the help of citizens, on the basis of formal and organized participatory processes, in all scales. *"Specifically, the institutional and governance chapter of the PNDU, states that"* the current institutionality, fragmented, reactive, centralist and informative, must move towards an integrated, planned, decentralized and participatory. "

In the area of public management and urban local development, participation is also imperative. The Law on Associations and Citizen Participation in Public Management, promulgated in Chile in 2011, imposes on all state services, including municipalities, the development of a participatory management that is express in various actions. Although experiences have been develop at the local and ministerial level, there is still a long way to go before these actions can be considered real participatory management.

Within the framework of these international and national references, as academics and researchers our main objective is to install in the practices of our students a notion of shared responsibility in urban design, in order to contribute to the challenges of our country within the framework of the New Urban Agenda. It is necessary to contribute with reflection, research and practice to promote and increase citizen awareness and reinforce the right to the city, the right to think and decide about

the city that is inhabit, where I work, move and enjoy myself.

The university plays a fundamental role in serving as a space for meeting and dialogue and putting the emerging issues on the table, inviting actors, public, private and academic.

This paper aims to share experiences, in various communes of the Metropolitan Area of Santiago (Recoleta, Independencia, Santiago), processes of mobilization and involvement of citizens to modify or protect their habitat. These experiences are the result of exercises carried out by students of two Urban Planning Courses during the period 2014/2018.

KEYWORDS: university teaching, citizen participation, urban planning, local urban management

INTRODUCTION

This article aims to expose and reflect on the challenges that the teaching of urban planning imposes on us today so that it effectively incorporates a participatory dimension, both in its conceptual scope and in the application of these concepts. The problem that arises here comes from our own adscription, the academy has times and formats that do not always coincide with the development of participatory processes, both in the theoretical subjects and in the architecture or urban design workshop, which makes it difficult to insert students into real participatory processes.

The following article is structure in three sections: the first deals with general concepts of participation and describes the institutionality of participation in Chile since the beginning of the 2000s. The second presents some achievements and difficulties of the incorporation of the participation in the teaching of urbanism in two courses of the Architecture Degree. One of the old curricula of the Carrera, aimed at students of the 6th semester of architecture and the other of the current curricula implemented since year 2016, oriented to students of 4th and 5th semester. Finally, a third section of reflections from the development of the exercises carried out in both courses.

1. GENERAL CONCEPTS OF PARTICIPATION

1.1. Participatory Urbanism

What do we really mean by participation? The concept of participation is not a simple or not a unique one, it can represent many forms of inclusion. In general, we could say that it refers to the different forms of inclusion of citizens. Inhabitants, workers, users, beneficiaries or affected, in the various areas of collective construction of the city, in short, we would say that it is about the relationship that is established voluntarily or imposed between the citizenry and the State at all levels.

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The City Council of Barcelona in its call to the XVIII Conference of the International Observatory of Participatory Democracy (OIDP) stated that democratic cities are those that: *"in addition to declaring the importance of citizen participation, deploy sufficient and useful channels so that each person can find the most appropriate means to their own characteristics and, thus, be involve in the collective construction of the policies that affect them"* Barcelona, November 2018.

"People are interested in cities, they want to be co-authors of urban decisions. The cities grow as there is consensus in the projects" Sergio Baeriswyl, President CNDU, 2018.

"Citizen participation in public management is understand as the process of social construction of public policies that, according to the general interest of democratic society, channels, responds to or extends the economic, social, cultural, political and civil rights of people". Ibero-American Charter of Citizen Participation, Lisbon, 2009.

One of the most cited authors in relation to participation is Sherry Arnstein, 1969, who in the ladder of participation presents us different forms or actions or types of participation, which are expose as participatory actions. In her opinion *"manipulation, therapy, informing, consultation, placation, partnership, delegated power, citizen control"* apart from the last three, the rest of them are not recognized as properly participatory.

In another area, Merino points out that participating in the public sphere "means sharing something with someone, so participation is always a social act". It is also say that participation can be used to allude or mean everything that has to do or that involves people.

Finally, we could summarize the following key elements as those that in one way or another are present in a participatory process. Participation has to do with "people" but the important thing is the interaction between them (neighbors, residents, organized community, NGOs, government, companies, private corporations, international agencies, universities, among others), basically implies a willingness to share power, to share the urban space, to create it and take care of it collaboratively. This interaction entails the establishment of commitments and agreements between the actors, defining the levels of participation and co-responsibility. Participation is also about citizenship and rights, about recognizing citizens and communities as valid, active and responsible actors, considering their diversity. Therefore the call of the different actors becomes a fundamental issue, not only in the real will to incorporate them, but in the explicit disposition to recognize that there are diverse interests and that trying to avoid the conflict often ends up aggravating it. A real participation must be that which effectively leads all to be part of the decision making process. Finally, an effective participation must also contribute to generate social and citizen empowerment and control, involving the participants in the follow-up of the decision, granting continuity to the process.

1.2. Evolution of the institutionality of participation in Chile

At the local level, the issue of participation is not new in Chile, it appears in the modification of Law 18.695, Organic Constitutional of Municipalities, 1999. Title IV of this law refers specifically to the participation instances that the municipality must define and inform local citizens.

1. The following year, the first Presidential Instruction on citizen participation in public management is send to the different services. This instruction is consider one of the most important transformations that has been set at the level of public policy in Chile. The reason is that positions citizen participation as a key factor to promote a process of state modernization and participatory public management (Gentes, 2006). The guide defines five principles that should reflect public action*: "good treatment, transparency in public management, equal opportunities, respect for autonomy and diversity of organizations and citizen orientation".*

2. Law 20,285, 2008. Transparency and access to public information, *"Everyone has the right to request and receive information from anybody of the State administration, in the manner and conditions established by this law"*

3. In 2011, Law 20.500, 2011, Associations and Citizen Participation in Public Management was approve. This law stablish that all State services must create the Civil Society Council and annually carry out a Participatory Public Account and Citizen Consultations on the matters of the institution. Likewise, a Fund to strengthen organizations of public interest and the National Registry of them is set. Other modifications are also introduce to the Law of Municipalities, among which the updating of the Participation Ordinance stands out.

4. In August 2014, with the aim of strengthening and expediting the process of implementing the law, Presidential Instruction No. 7 is sent, stating that "Chile must move towards a new way of governing with the people, a model of public management with effective citizen participation "

5. In 2016, the National Council of Citizen Participation and Strengthening of Civil Society was set, a presidential advisory body to conduct a national participatory dialogue. One of its main tasks was to prepare a Report on the State of Participation in Chile. The final version of the report state that *"Citizen Participation is a pending task in Chile".*

As already mentioned, in the urban sphere, the National Urban Development Policy states: "Consider participation as the right of people to get involved in the construction of the place they inhabit or aspire to inhabit. The institutional framework must guarantee this fundamental dimension of sustainable urban development "(Objective 5.4 Effective Citizen Participation). Participation is one of the 12 principles of the policy. This principle state that decisions must be conducted with the help of citizens, on basis of formal and organized participatory processes, at all scales.

1.3. Global vision of a participatory process

In Figure N ° 1 we can see the different elements that make up and relate in a participatory process. They must adapt to the scale and the territorial and temporal context in which it develops. Likewise, the interaction and priorities that are established will depend on who is leading the process: institutional (process from above, top down) or citizen (process from below, bottom up).

In this context and with one or the other conduction of the process, the identification and construction of the map of actors is fundamental to avoid leaving anyone out of the process, the voluntary or involuntary exclusion of some actors can hinder or stop the process. Considering the time it takes to develop the process and the objectives you want to achieve with it, you have to decide how far you expect or can arrive, that is to say what kind of participation allows us to develop the scenario in which we are. This is directly link to the stage of the process that is expected or could be developed.

Finally, based on the above, the most appropriate participatory tools to develop the process are determined. The selection is also related to the quantity and experience of the human and economic resources available and by the type of actors that are expected to work (their experience, role and interests within the process).

Figure 1: Global vision of a participatory process. Own source

2. PARTICIPATORY DIMENSION IN THE TEACHING OF URBAN PLANNING AT THE UNDERGRADUATE LEVEL

The teaching experiences that are shared here come from exercises carried out by students of two courses of Urbanism. Participatory Processes Course in a Multiscale: housing, neighborhood and city, elective course for 6th semester of Architecture (old curricula), developed during the period 2013/2017 and the Course Methods and Practices of the Urbanism, obligatory course for 4 and 5 semester of Architecture (new curricula) in place since 2nd semester 2017).

Although this paper does not come from a scientific research as such, we are interested on the one hand to share our findings and reflections, but above all to exchange experiences in relation to how and when to introduce this participatory approach in teaching associated with architectural and / or urban design in its different scales.

2.1. Participatory processes in multiscale course: housing, neighborhood and city

The first course was run seven semesters in the period of 5 years, was a semester course, 16 weeks and 4.5 hours per week. This urbanism course was elective and we have an average of 25 students per semester.

In general terms, it was oriented to analyze the current institutionality and legality to incorporate an effective citizen participation in urban development, in its different scales, with emphasis on identifying the interaction of actors and the methodologies used, based on national and foreign experiences.

The objectives of the Course were to introduce and enable students in a participatory and inclusive urbanism, approaching design from a social and civic dimension. Specifically, the course emphasizes the need to incorporate the citizenship, community or social and community organizations in the process of building their habitat, therefore, the scale of the residential complex, the neighbourhood and the city is address as a basic condition of the democratic exercise and urban social integration.

The Course contemplated the development of two group exercises that are accompanied by theoretical inputs and group reviews. General concepts of participation, participatory process, participatory tools, participatory design and institutionality of participation were delivered. In addition some notions of tactical urbanism and placemaking were included.

Participatory tools are part of qualitative and quantitative research methodologies and other specific sessions associated with participatory processes. Among them, it is worth mentioning the manual of collective mapping developed by an organization called Iconoclasistas. Also what we call "the everydayness of participation" from what Sounding (www.soundingoffice.com) proposes, an English organization that promotes citizen involvement at the level of citizen organizations and local gov-

ernments, identifying a series of actions inherent to the participatory process, such as: Share, Listen, Draw Invite, Dream, Give ideas, Write, Think space, Walk, Mapping, Learn, Discuss Dialog, Converse, Observe, Work together.

| Exercise	Duration approx.	Phases	Results
1. Participatory design within the Campus Andrés Bello (FAU and FEN)	4 weeks	• Selection of a space within the campus (deteriorated, conflicts of use). • Observe and characterize the space, arguing and specifying the problem.	Recognition and characterization of space: problems and potentialities.
		Preparation of participatory methodological strategy.	Define who, with whom and how.
		•Systematize and graph the results of the application of the different tools. • Transform these results into design keys to be able to propose the project idea for the selected space.	Target image for the selected space.
2. Participatory diagnosis and proposal of alternatives	6 weeks	• Field visit • Workshop with the community, use of plans of the area to consult and dialogue with the neighbors to know their perception of the neighborhood.	Recognition of the place and diagnosis of the physical and social problems.
		Workshop with the community to discuss the proposed solutions for these problems, made by the student teams.	Validate and / or adjust the proposals
		"malón urbano" activity carried out with the community in the same street subject of the intervention with the intention of promoting greater interaction and associativity among neighbors	Follow up to the neighbours, of what was raised by them.

Table N ° 1: Exercises made in the Course. Own source

	Campus Andrés Bello	Spaces to choose
		1. Patio de arquería 2. Patio postgrado 3. Espacio hall central 4. Trapecio FAU 5. Espacio residual titanic /cancha 6. Cancha FAU 7. Cancha FEN 8. Cancha 2 FEN 9. Espacio residual FEN 10. Trapecio FEN

Figure N° 2: seleccted spaces for Exercise 1. Own source

This first exercise introduces the students to a process of participatory design in which they were both users and designers, applying different techniques and concluding in a project idea where the elements that they had obtained from the dialogue with the users must be explicitly shown.

The second exercise was inserted in a programme that was being developed in a commune of the Metropolitan Area of Santiago, as part of a municipal or public program.

One of them was called Physical Recovery and Identity of Madrid Street, Commune of Santiago, within the framework of the *"Programa Revitaliza Santiago"* Municipality of Santiago. Programme financed by the Inter-American Development Bank, IDB, with the objective of improving public space by promoting citizen participation in this process.

From what was developed in exercise 1, the first thing was to observe, record and characterize the place, with this we worked with different techniques in a first workshop with the community to make a shared diagnosis and contrast the perceptions of the team with the community. With the informa-

tion obtained from the first workshop, the team prepared alternative proposals to solve the spatial problems or deficiencies pointed out by the community, dialoguing and refining the proposals with the community. The third day has as its purpose to summon the community, to get to know each other better and to be able to comment again on the proposals prepared by the different student teams.

Figure N° 3 - Participatory Process for Madrid Street. Own source

Another example of exercise 2 is the one that took place in Barrio Chorrillos, in the Borough of Independencia, of the Regeneration Urban Programme (PQMB). In this case, it was a *"Participatory accompaniment for the Future Agenda of the Chorrillos neighbourhood"*

The PQMB started in 2006 with the aim of initiating a physical and social recovery on a neighborhood scale, facilitating the link of that neighborhood with the city. Its action is carry on with the participation of the community, the municipality and the neighborhood team.

The academic exercise sought to confront the students with the concrete reality of the development of the PQMB, in this neighborhood that was in Phase II, of execution of its Master Plan.

From a visit to the neighborhood and from the information received from the neighborhood team, the student teams identified five themes: Environment, Security, Public Space, Identity and Connectivity.

With this information, two workshops were carry on with the community, in which each team dealt with the community about its theme.

The first workshop was a socialization with and among the neighbors in order to identify their priorities for the future of the neighborhood, the second workshop aimed to share ideas, experiences and proposals for the different themes with the neighbors.

Figure N° 4 - Participatory Process to support the elaboration of the Future Agenda in Barrio Chorrillos. Own Source

METHODOLOGIES AND RESULTS

In both exercises the students faced real and complex situations, for example that the second meeting in Calle Madrid need to be done again because the attendance was very low for the first time. In the case of Barrio Chorrillos the second meeting that was schedule in one of the municipal schools, could not be used because of an internal communication problem in the municipality, we had to improvise on the march because the community was there.

In both cases, the students did previous work with the community in door-to-door activities, which gave them another perspective, a more individual approach, which later became collective. It also allowed them to see how municipal teams and neighborhood teams work, their strengths and their weaknesses.

In the case of Calle Madrid, although all the teams worked on the same subject, the rehabilitation of said street, each team put emphasis on different aspects such as security, mobility, public space, street furniture, etc. Therefore, in the work with the community, although they used interviews and mappings, the contents and forms of application were different.

A similar situation occurred in Barrio Chorrillos, specifically because each team identified a different topic and based on this they decided their tools. In this case, they also contributed to the call, designing posters to invite and motivate the neighbors. As a contribution to the Future

Agenda, each team looked for information from other organizations, public programs, national and

international references that could help the neighbors. For example on issues related to mobility, urban gardens, pets, associativity, etc.

COURSE METHODS AND PRACTICES OF URBANISM

In the second semester of 2017 this course begins, corresponding to the 3rd Urbanism of the new Mesh of the Architecture Degree.

Objective of the Course: introduce and enable the student in the knowledge and application of the different methods and instruments of urban planning focused on the analysis and participatory interpretation of the environment and urban design of public spaces, with a critical and proactive vision.

In this case, the first exercise of this course was the "Participatory analysis of a neighborhood"

Exercise	Duration approx	Phases	Results
1. Participatory analysis of a neighbourhood	**4** weeks	• Selection of a neighbourhood near the Faculty. • Observe and characterize the neighbourhood, define limits, actors and argue and specify their problems.	Recognition and characterization of the neighborhood: problems and potentialities
		Preparation of participatory methodological strategy, map of actors, participatory tools to be used and application timetable.	Define who, with whom and how.
		• Systematize and graph the results of the application of the different tools. • Systematization and proposal of spatial solution to the problem of the neighbourhood.	Objective image for the theme and / or area of the selected

| 2. Diagnosis and participatory design	6 weeks	• Field visit • Workshop with the community, with plans of the area, consultation and dialogue with the neighbors to know their perception of the neighborhood.	Recognition of the place and diagnosis of the physical and social problems
		Workshop with the community to discuss the proposed solutions for these problems, made by the student teams	Validate and / or adjust the proposals

Table No. 2 Course Exercises. Own source
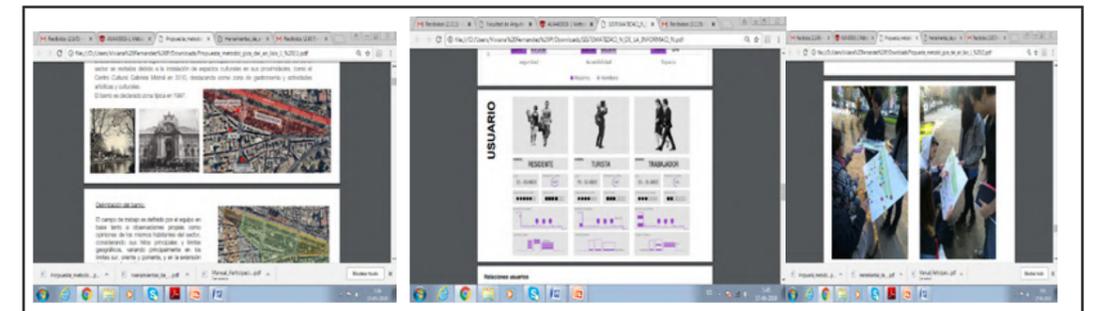
Figura N° 5 - Participative analysis of Santiago Neighbourhoods: Barrio Bellas Artes. Own source

Figura N° 6 - Participative analysis of Santiago Neighbourhoods: Paris- Londres. Own source

METHODOLOGIES AND RESULTS:

In each of the neighborhoods, the teams proposed various tools or techniques to collect information from the different selected actors: residents, merchants, workers, tourists, students, etc. The tools most used by the students were the interviews in the same neighborhood, carried out on different days of the week and at different times, the collective mapping in the neighborhoods, either showing a map of the area to identify problems or deficiencies or to validate solutions. The mailbox tool used by a couple of teams was interesting as they had no problems leaving the mailbox on the street and got many more responses than expected.

In summary, we could say that the main objective of both courses is to promote in the students' practices a notion of shared responsibility in the design, planning and construction of the city, starting from their own disciplinary vision and contrasting it with actors selected by themselves, with different techniques. The process of systematization also led them to understand that it is necessary to separate demands. Spatial ones that we can manage (improve public space, incorporate or modify the type of furniture, improve lighting, generate awareness in the maintenance of space, among others) of those others that we cannot solve with the intervention or improvement of the space (increase in police security or greater municipal concern or formation of citizen habits).

3. FINAL REFLECTION

One of the main problems to promote the teaching of a participatory urbanism or a collective construction of the city is the fact that in general terms there is no consensus among academics of the benefits of integrating the citizenship or community in that process. It is probable that if we consult them some will say that if it is valid and necessary, politically correct, however, it does not always appear explicitly in teaching.

At the beginning of the Courses, we always consult if in the workshops previously studied or in other theoretical subjects, any approach to the community has been raised or made, if it has been identified, if it has been consulted, if the information collected has been considered, interpreted, transformed into design keys? In most cases, this has been little and if the information was consulted or interviewed, it does not significantly influence the design process. In the current course, students reported using a variety of techniques: participant observation, mapping, sensory analysis, photo essay, surveys, and guided tours, among others. However, in the exercise done or in which they are doing now, the diversity has not been so wide, many argue that some techniques used in the end did not affect the design.

While it is true that since we began in 2013, we can find many more student research seminars and pre and postgraduate theses on participatory issues, which excites us and encourages us to continue promoting the subject.

In both courses, students are excited, involved, we would say that they find meaning in the incorporation of users, beneficiaries, or people affected. However they consider them, recognize that the community knows more than them, that their experience of life in that place we do not have it, it does not mean that we cannot observe, record, investigate. But it is not only the physical, the exterior, to understand that space whatever its scale it is necessary to contrast our observation with that of those who they live or work in that place. A pending task is to consult the students of the past courses, if they have had the possibility of applying what they have learned, some of them are already qualified.

The other great challenge is how to reconcile the academic time with the real time in which the participative processes is carried on, in almost all described experiences; the exercise carried out by the students was inserted in a process in development, more at the beginning or more at the end. In most cases, we did not have all the control of what we could do with the community, nor the possibility of participating in its call. In the 5 or 6 weeks that our exercise lasted, our role was to accompany, support the process, contribute with other methodologies, support with ideas, suggestions, activities that we could carry out because we were a significant number of facilitators.

This approach to the reality of the processes was always the most important and revealing of the exercises. Sometimes everything went well, but at other times for reasons unrelated to our participation the process was interrupted and our ability to improvise was put to the test

Maximum, sometimes almost no one arrived at a planned meeting and we should encourage ourselves to do it again or modify the next one overcoming our frustrations and discouragement.

The challenges in that sense are not minor, in more than one occasion a group of students, posed that we were wasting time and that in the end they could well design without the community, even so there were others who nevertheless went ahead. Despite this, most expressed that the role of the community was fundamental, that they contributed knowledge and experiences that we could not find in such a short time or from a vision "from outside".

On the other hand, at the national and international level we find more and more organizations and communities that have known how to assert their rights in different areas. Those experiences allows us to feel part of a larger collective that shares and tries to install a more collective, collaborative awareness, where we are part of a set of actors, not necessarily those who decide on the space of others.

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SESSION 2

HOW CIVIC LABS CAN IMPROVE URBANITY THROUGH COLLABORATION AND DIGITAL TOOLS

How civic labs can improve urbanity through digital tools and experimental collaborative processes? Digital technologies are facilitating the development of open projects and participation of the local community on solving urban problems. This is leading architects to rethink the processes of how we design, built, maintain and inhabit our cities. Many of the citizen initiatives emerge from technological civic labs - experimental spaces articulated in networks, called fablabs, makerspaces, hackerspaces, living labs, media labs, among others. This reality is playing an important role in the democratization of digital tools and engagement of networks of collaboration in the search for common solutions to citizens.

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Moderator:
Ana Carolina Cardoso

""There are three fundamental lessons that the experience of Lab Santiago can bring to the reflection on the current moment of democracy. First, the value of the common, that is, the importance of finding the right motivations, formal or informal organizations, and the right spaces to mobilize citizens around joint action for the common good. Secondly, the potential of neighborhood communities as places of relevant, invisible and not always properly valued resources, key ingredients to be transformed collaboratively and experimentally into actions that are useful to the community and its daily lives. Third, the need to create moments of experimentation of practices and meeting of knowledge, from empirical to scientific, possibly with some risk, and to study their results for further improvement and replication in other contexts."

Mota, José. "Construir comunidade". Jornal Público, June 2019

keynote speaker

PRESENTATIONS

The Market as a Public Space inserted in the urban environment

Camila Climaco Willy and Joseane Pivetta, Universidade Filadélfia, USA

ABSTRACT

This article is about the types of public and private markets in Londrina – PR, Brazil. It explores a vision of this theme, including its evolution, concept, functions, and addresses the ways in which public spaces can be integrated into a consolidated urban environment and the connections established with their surroundings and local society. Through the concept, public market is the one that deals with the sale of foodstuffs and handcrafts, it is where producers and consumers are brought close together, as well as it is a meeting place, which facilitates significant social interactions. It provides many benefits, such as making fresh and healthy foods available, helping the economy to grow, and generating positive impacts on local business in various aspects. Public markets also serve as a space for leisure activities and recreation where communities of different ethnic, cultural and socioeconomic backgrounds can meet and interact with each other. In the case of Londrina, there are some inadequate free public spaces dedicated to leisure, creating a lack of opportunities for the city's inhabitants to interact with other and the urban environment. This article is justified by the qualification of the public spaces that would help to enhance urban vitality, boost multi-ethnic interactions, and break down socio-economic barriers, as well as to improve the relations of the public and private sectors, the permeability and the fluid access between these spaces. The objective of this article is to analyze the aspects that define the concept of public market and to understand how public spaces can serve to promote the interconnection between the public and the private sectors, making access easier and prioritizing how to better improve interactions among its users. In the city of Londrina, this will be analyzed through field, theoretical researches and photographic reports, as a brief reality's diagnosis: existent street fairs, public and private markets, how they provide the well-being, hygiene and security of its users, as well as their insertion and role in the urban environment. For this, identifying the types of markets within the concept of public is fundamental to realize an analysis of the urban context and how do people relate with each other. Ultimately, this study contributes to garner subsides and generate guidelines, aiming attribution and urban and social interactions, that will lead to the design a market suitable to meet the needs of the local population, inserted in the urban environment, as well as to emphasize the importance of spaces that promotes leisure.

KEYWORDS: Public Space; Public Market; Free Spaces; Leisure;

1. INTRODUCTION

In addition to the supply of good food and some services, markets are places that promote users' distraction and leisure, therefore they go beyond the simple act of selling, hosting social functions and serving as a meeting point. Furthermore, they are places where the exchange of mutual needs between producers and consumers occur, generating a greater rotation of the products and always allowing the sale of a variety of fresh products.

Nowadays, it is possible to perceive the human need to seek more interaction with its environment as well as with other individuals, dealing with sociability and leisure. Thereby, making public spaces increasingly more important, since they promote both social and urban interactions.

That is why it is considered important to analyze some existent public spaces in Londrina (Paraná – Brazil), such as street fairs and Public Markets and how they relate to and are inserted in the urban context. Also, to understand free spaces that promote the continuity of the public space, seeking the users' well-being, security, and to discuss the relations between public and private spaces, centrality and the market as a mark in a metropolitan scale.

In Londrina, public markets and other places with the same characteristics have a closed format. Because of this, they do not stimulate long stays and are not attractive to its users. They are seen as places of difficult access for pedestrians, because their location is in more isolated areas with high flow of vehicles. As a result, markets have lost their meaning, giving space for street fairs that bring with them the sale of fresh products, shopping and gastronomic leisure.

The objective of this article is to show the market's evolution, with a quick history and chronology of the facts until the present day, to compare its different typologies and concepts and to examine its functions and relations with the environment in which it should be inserted. The definitions and the qualification of public space, concepts that guides it, its relations with the urban scenario and with its users, always aiming at sociability, urban vitality and leisure.

Based on field and theoretical research, photographic reports and analysis, this study allows the use of important information, positive and negative points and different concepts and references. It can help to generate subsides and to assist in the development of design guidelines for an opened market, inserted in a consolidated urban environment, that fulfil the needs of the local population, as well as to show the importance of public spaces designated to leisure.

1.1. MARKET: A BROAD VIEW OF THE THEME

Considered as an evolution of the street fairs, markets are focused on food commerce and are settled in fixed places, aiming to attend to the needs of the population, be it weekly or daily. These are places with a great flow of individuals, which promote meetings and the sociability among its users. They can also be considered as a landmark for the city, because they are attractive not only for shopping, but also for leisure.

(...) Markets show the soul of a city: what it produces, consumes, sells and bargains. Due to the profusion and variety of regional products and local handcrafts, markets are usually visited by tourists from all over the world. (Vargas, 2009, p. 240).

It is a place of commerce, where the direct contact between the producer and the consumer occurs. It provides, in a way, an exchange of mutual needs, and consequently has a diversity of products, usually with more affordable prices.

As affirmed by Cordeiro (2015), public markets go beyond the simple activity of selling goods, hosting many social functions and being characterized as a meeting point. Besides providing foodstuffs, they are places that promote distraction and fun for people. They become a reference point in the city and are chosen by many people for their shopping, because the products are usually fresher and cheaper, which guarantees the survival of theses spaces among current supermarkets.

1.2. HISTORICAL CONTEXT: THE EVOLUTION ON MARKETS

Among the first examples of commerce that existed, the bazaar, the agora, the forum, thistle, periodical markets, squares and fairs, basilicas, some temples and churches are worth being mentioned. These typologies are different according to the periods and economic situation of each era.

These spaces were areas strategically located in the cities, usually centralized, in order to permit free movement of producers and sellers, as well as displaying their products in an easy and more visible way to their customers.

As a result, the streets and squares became free public spaces designated to purchases and reunions, and based on this, the fairs were created. Initially, they had a religious and political aspect, but over the time their forms were organized, as well as its mercantile functions.

Many markets had their origins from the fairs. However, as time passed and the historical context changed, they were materialized in constructions, because the life in the consolidated cities required a continuous supply of the needs of their inhabitants.

The evolution of markets is directly related to the history of the consolidation of the cities. As Hertzberger (1999) discusses, after the industrial revolution, a new era has begun. With that, occurred the development and acceleration of the systems of production and distribution. This led to the creation of covered markets. Also, from this new economic situation, emerged a necessity to cluster more stores and add more sanitation and garbage collection.

1.1. **QUALIFICATION AND INSERTION OF MARKETS IN THE URBAN ENVIRONMENT**

The types of markets are classified from their formal characteristics and constructive elements, such as pillars, balconies, stairs, columns, ornaments, and others. Based on these, there are two main types: the opened (that may have patios and/or cover), and the closed/covered ones.

According to Bonduki (2012), there is no identical public market, because each one expresses the identity of the city where it is inserted and of the region where it is hosted. It is classified as places that sell food, it is where the mixture of classes, convergence and exchanges occur, and can be a stage of cultural manifestations in general.

Due to the development of other commercial establishments, such as supermarkets, with their facility of access in different points of the city, their modern forms of storage and commercialization, the idea of the public market has become increasingly distant and less practiced in the cities of Brazil. Currently, in Brazil, the government has abandoned some public markets. There is no maintenance and because of this negligent care, some are even closed.

1.4. THE IMPORTANCE OF MARKETS AS PUBLIC SPACES: VITALITY, SOCIABILITY AND LEISURE

Public markets promote urban vitality, because the concentration of commercial activities and the meeting of many individuals in several periods of the day in the areas where they are located. Alex (2008, p.20) says that, public spaces are characterized as any space that does not have obstacles to access and participation of any person. As a complement, Gehl (2015, p.63) tells that the public space should be alive, being utilized by many and different groups of people.

According to Vargas (2001), "public space par excellence is the place where a person can be alone without giving the impression of being lonely". Based on this thought, it is possible to see the historical relation between the commerce and the public space, in which its permanence and vivacity are present not just for the supply of their population, but also in the creation of places of distraction and leisure.

The sociability is fundamental on the concept of the urban vitality of public spaces, because the areas of vitality are the ones that promote the spontaneity, unpredictability and diversity of the meetings, as well as the plurality and diversification of activities and their users. According to Segre (2005), "a public space must be conceived as an accessible urban space where the encounter of diversity takes place".

This way, markets can be qualified as spaces of sociability, since they build a place of mutual interaction between people, it is where the art of socializing is exercised, through predominant customs or behaviors related to different activities.

Likewise, leisure is also important to the urban vitality, it is present daily in human lives. It is seen as a set of free, voluntary and pleasure-generating activities that are associated with individuals' free time

(...) Leisure is a set of occupations which individuals can surrender freely, whether to rest, to enjoy, to recreate and entertain themselves, or to develop their disinterested formation, their voluntary social participation or their free creative ability after getting rid of or extricating themselves from professional, family and social obligations" (Souza apud Dumazedier, 1976).

The leisure that markets as public spaces can promote are characterized in three main types: recreational leisure, cultural leisure and purchasing leisure, which is divided in two, personal and gastronomic.

The public spaces are directly engaged for the communication and social meetings. They attract many people because they are places that generate activities, leisure, socializing and inclusion. Most of these spaces are responsible for hosting various types of leisure. Many of them provide distraction and are places of relaxation. Also, there are opportunities to have fun, buy something or just stay for a period of free time.

(...) 'People go where people are', says a common proverb used in Scandinavia. Naturally, people are inspired and attracted by the activity and presence of other people" (Gehl, 2015, p.65).

The access is the initial condition for the appropriation and the use of a space. It can be classified into three different types: physical, visual and symbolic/ social. The union of these three types can make a space more or less public, according to their need.

The qualification of the space is characterized in a way that depends entirely on their access, considering that, the more difficult the access, the more private the space. Thus, "public" and "private" are understood through the spatial qualities related to access and the relation between private property and the supervision of specific space units. Sometimes the access, and certain demarcations are a principle of legislation, but usually, it is only a convention respected by all.

Therefore, markets that are considered public, as a result of their form of supervision (public power) and, because they are places that have unrestricted access, they can be seen as a continuity of public spaces, as well as an intervention of the free areas that bring improvements and qualifications of the urban space.

1.5 RELATIONS BETWEEN CENTRALITY AND MARK PROVIDED BY MARKETS

Urban centers are known as dynamic places, with high flow of people, vehicles, commerce, and can be considered as points of reference in cities. It has been present since the middle ages, where they served as a place that hosted public and religious institutions. Today these central areas are not only

of cultural importance, but also economic.

It is considered that buildings with public functions, as well as public markets, are located in strategic points where people will pass by. According to Gehl (2015, p.67), this makes the distances walked by foot seem shorter and the route becomes a simple experience.

From this, it is possible to say that public markets have been in existence since the middle ages, mostly located in the central region of the cities, because they are public places, aimed to the commerce and they easily attract people. They still follow this idea. Its location is one of the main determinants that consider it as a landmark for the city, as long as it is located where there is a high flow of people and are commercial centers, viable for pedestrians, and for vehicles.

These landmarks, as mentioned by Lynch, (1999, p.112), are characterized for their singularity, contrast with the context that they are inserted, and are more admirable if are clear on their general form, or if they are rich in textures and details, becoming visually inviting.

This concept also includes landmarks where traffic flow interruptions occur, as well as intersections and decision-making points, characterized as places where perception is most intense, concluding that buildings located where users decide which way to go are easily remembered.

1.6. MARKETS IN LONDRINA – PR, BRAZIL

Actually, in Londrina there are markets at many locations in the city. Some of them are going to be mentioned and classified as: closed public and private, opened diurnal and nocturnal, as shown in Map 1. The subtitle introduces as a closed public market: Mercado Shangri-lá (1) and Mercado Quebec (2), as closed private market the Mercado Prochet (3). For the opened ones, there are the street fairs, being the diurnals: Feira Av. Saul Elkind (4), Av. São Paulo (5) and Rua Santos (6), and nocturnal Feira Rua Gomes Carneiro (7).

SUBTITLE
1. MERCADO SHANGRI-LÁ
2. MERCADO QUEBEC
3. MERCADO PROCHET
4. FEIRA AV. SAUL ELKIND
5. FEIRA AV. SÃO PAULO
6. FEIRA RUA SANTOS
7. FEIRA RUA GOMES CARNEIRO
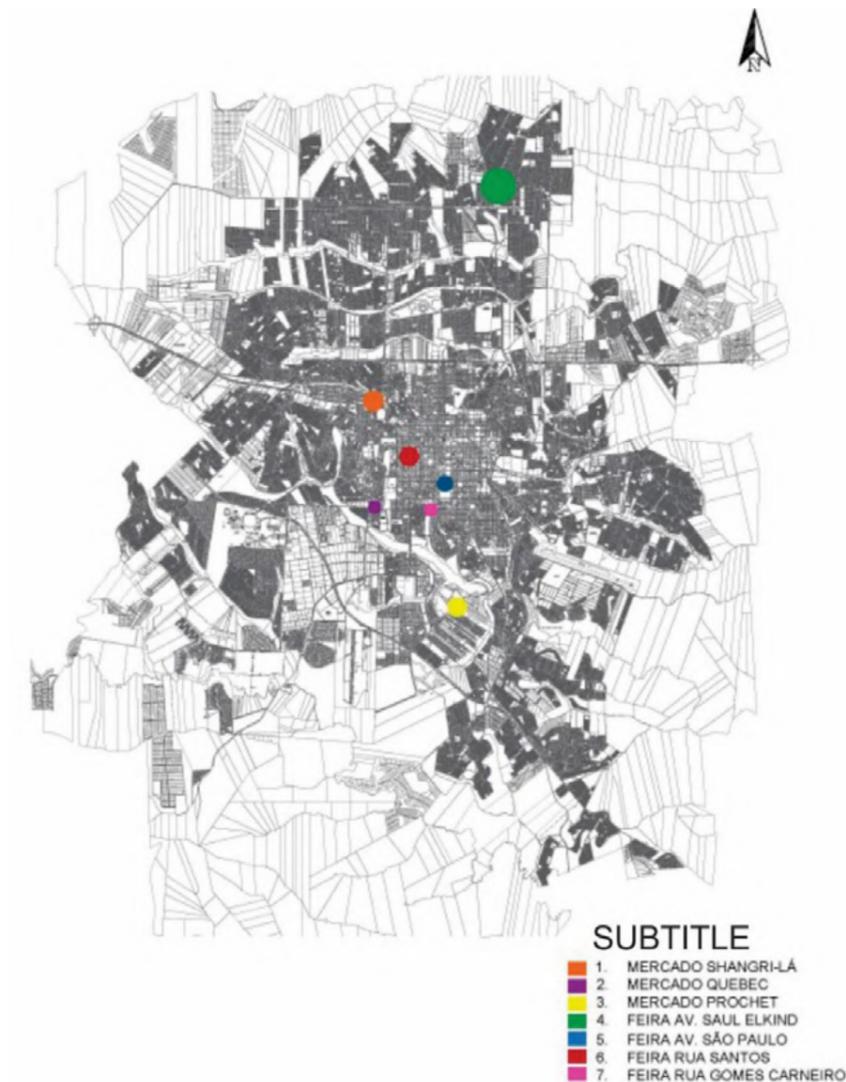
Map 1 – Location of Markets in Londrina – PR, Brazil. Source: Author (2019).

In Londrina – PR, Brazil, public markets with a closed configuration are seen as not very attractive, because they do not stimulate the long permanence of their users and they have an absence of free spaces designated to leisure and entertaining. They are located in more isolated areas, near avenues with a high flow of vehicles, making the access of pedestrians more difficult. Some are in precarious situations, as they do not have a good infrastructure and do not include adequate hygiene, comfort and safety.

The Mercado Shangri-lá (Figure 1) has been in the city since the 1960's. It offers a big variety of products, fruits and vegetables, fish and meat, flowers, handicrafts and different drinks. As a result, it is quite busy on weekends. This market was not designed to host social functions nor provide spaces dedicated to leisure. It was intended to serve only as a trading area.

Figure 1 – Mercado Shangri-lá – Londrina (Brazil). Source: Author (2019).

It is considered by many people as a meeting place. It has a lot of snack bars and, on weekends it hosts some social events, as pet's adoption fairs and others. However, there are no spaces dedicated to leisure. There are only a few tables spread in its hallways facing the bars around, as shown in Figure 2, but they do not stimulate the long stays, because when crowded the space is small, and become unpleasant to its users.

Figure 2 – Tables in the Mercado Shangri-lá's hallways – Londrina (Brazil). Source: Author (2019).

In front of the Market's main entrance there is a small plaza. According to its users it is not very attractive. It has only a few benches, but nothing else that would stimulate their staying or integrate its users and the urban environment.

It is located in a region that is not frequented by many pedestrians, mostly because it is an area surrounded by major avenues that have a high flow of vehicles. This is also the case of Mercado Prochet, because its location is not seen as a desirable point. It is in one of the most affluent areas of the city, making access difficult and, in a way, restricting its public.

It has a great infrastructure and was designed to serve as a market. They offer a huge variety of products, mostly fast foods such as snacks and drinks. They also sell clothes and handicrafts. In addiction to the food court (Figure 3), once a week there are some food trucks on its parking lot. Overall it is not an attractive place because of its negative aspects, and that is why it has many closed stores

.

Figure 3 – Food court in Mercado Prochet – Londrina (Brazil). Source: Author (2019).

Another example of market in Londrina is Mercado Quebec. Due to its precarious structure, lack of hygiene and local maintenance, it has lost its "essence", and ended up being unoccupied. This space was supposed to serve as an Institutional building for Education in Londrina. It is currently closed, as shown in Figure 4, waiting for some renovation. On Tuesdays there is a small fair on its parking lot.

Figure 4 – Main entrance Mercado Quebec – Londrina (Brazil). Source: Author (2019).

Based on the negative points above, the markets in Londrina, have lost their real meaning by not providing all they could, such as leisure, good infrastructure, comfort and hygiene, and fresh and cheap food, giving space to street fairs. Ideally, these locations should provide an inviting ambience to the residents of the city by providing markets that attend to their need and have spaces for recreation and sociability.

There is no definitive physical space designated to the street fairs. In a general sense, they appropriate the streets of the city with tents and they have a weekly schedule, setting in different parts of the city every day.

It is possible to find at least three different fairs distributed throughout the streets, each day in a different location of the city. For analysis, some fairs in the city have been chosen, ones that have been occupied the streets for a long time, that are quite busy and easily accessible. Notable examples include: the Feira Av. Saul Elkind, Feira Av. São Paulo and the Feira Rua Santos.

The Feira Av. Saul Elkind, is popularly known as "Feira do Cincão". It is a place for shopping, as well as a meeting point and a touristic attraction, as seen in Figure 5. It has opened every Sunday morning for the past 30 years in the northern region of Londrina. It is the biggest street fair of the city and it occupies about then blocks, it is very crowded and has become a habit in the life of the inhabitants of the city's north region.

Figure 5 – Feira Av. Saul Elkind – Londrina (Brazil). Source: Author (2019).

The Feira of Av. São Paulo (Figure 6) on Sundays is already considered by many people as a meeting place for breakfast. That is because, it is a popular practice for people to leave their evening activities and parties at night to go there simply to eat a *pastel* (popular food in Brazil).

Figure 6 – Feira Av. São Paulo – Londrina (Brazil). Source: Author (2019).

It is possible to find a bit of everything in these street fairs, as indicates Figure 7 (Feira Rua Santos), such as fruits and vegetables, meat and fish, street vendors, tools, clothes, handicrafts, foods and some have tents for repairing pots and umbrellas.

Street fairs are places that promote shopping and gastronomic leisure, because there are tents that host the production of foods that requires immediate consumption, known as fast foods. It has many stools around these tents, certainly influencing its users to have a quick snack then leave after a short period of time.

Figura 7 – Feira Rua Santos – Londrina (Brazil). Source: Author (2019).

In addition to the diurnal fairs, there are also nocturnal ones, better known as "Feira da Lua" (Moon Fair), they also take place in different points during the week. They have a different concept, more focused on the sale of fast food, promoting the gastronomic leisure and also providing the sociability of its users.

On Wednesdays, from 6:00p.m. onwards, the Moon Fair takes place on Rua Gomes Carneiro (Figure 8), more specifically in the parking lot of Zerão (which is a park in Londrina). It sales some fruit and vegetable products, but its focus is on food tents, like pastel, Japanese food and others. There are tables, stimulating the local consumption and promoting the leisure and distraction of the users.

Figure 8 – Feira Rua Gomes Carneiro – Londrina (Brazil). Source: Author (2019).

FINAL CONSIDERATIONS

Based on these analyses, it was possible to observe that between the opened and closed markets' typology, the opened ones show themselves integrated with the urban environment. They provide easy access, at the same time they promote the sociability among their users and they value their producers. The closed ones are classified as more private spaces with a more difficult access. Also, they have an absence of spaces for leisure, and as a result some of them ended up losing their true meaning.

Markets are seen as places that promote shopping, recreation and cultural leisure, as well as the integration of public and private spaces. They embrace different types of access and make space less restrictive, always emphasizing safety, comfort and hygiene of their users.

In the case of Londrina, these analysis show that there are inadequate places designated to leisure and the necessity of free public spaces aimed for the users' leisure and integration with the urban environment.

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Network Society and bottom-up urbanism: Facebook as an analysis tool

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ABSTRACT

Currently, we no longer need the physical environment to establish dialogues, or to share knowledge. The relationships between individuals and cities have changed. Different from what is predicted in some dystopias (GIBSON, 2016) (BLADE RUNNER, 1982), it has never been easier to find people with common interests and to promote collective action (SHIRKY, 2011). The cibridism (BEIGUELMAN, 2004) did not take us out of the public spaces, indeed it brought us other possibilities on how to live in the cities.

By increasing the connection capacity between individuals (CASTELLS, 2013), the practices of urbanism bottom-up were popularized in the second decade of the twenty-first century. In many cases the connection structure between individuals participating at a bottom-up urbanization process is established in a communication space built on social networks. Through these platforms the actions of these groups gain visibility and popularity, increasing the volume of data and information. This article aims to present the findings of an academic research, where I investigate the process of bottom-up urbanism that occurs in Largo da Batata, in the city of São Paulo, through the analysis of the information traffic of the Facebook page of this Group.

As a starting point for the methodology, a previous research identified that the Facebook Group "A Batata Precisa de Você" with 6,526 members would be the best hub for data extraction. From this study choice, information was extracted on the page between March 2014 to December 2017, through the Netvizz Application Programming Interface and the "Group Data" method.

In total, the content and detailed information (number of likes, comments, etc.) of 6,108 posts were extracted. The analysis of these interactions indicated that the bottom up urbanism movement was not carried out exclusively by only one group, but instead was driven by diverse and often divergent groups that used the virtual network as a space of communication.

The second methodological step was to understand who were the actors that were promoting the activities in the space itself. During the analyzed period, 276 events of diverse themes were arranged, promoted by 125 different organizers, with different proposals and characteristics.

Regarding the conclusions, the research pointed out very interesting information about the dynamics of relations and uses of this urban space. Among the discoveries, 45% of the promoted events

were carried out by organizers who were responsible only for one event throughout all the studied period. On the other hand, the groups committed to constant activities on the space, could not organize activities so often, even though some of them had resources available for it.

The discussions that emerge from the results of the research, open space to reflect on the perennial use of the urban space by certain actors. In addition to questioning the possible formats for community appropriation, as well as the role of Public Power in these relations and the influence of services monetization as an incentive for bottom-up urban planning processes.

As an important issue for this article, we discuss whether bottom-up urbanism groups are projecting constant improvements in the possibilities of community urban appropriation or whether they are seeking, through collaborative practices, to construct proposals for the static and rigid use of the space.

KEYWORDS: Network Society, Bottom-up Urbanism, Facebook, Collaborative practices.

INTRODUCTION

We are finally in 2019, but our urban context is very different from the one created by Ridley Scott in Blade Runner (1982). Unlike some futuristic works, cyborgism (Beiguelman, 2004) did not make us less physically connected, and although our urban problems are complex, the urban sprawl imagined by Gibson was not built. Contrary to dystopias exposed in the TV Show Black Mirror (2011), social networks and the availability of online data have not only brought us invasion of privacy and risks to social coexistence, but a new "toolkit" with which we are still learning to work.

Considering that the network society is consolidated by overcoming the digital divide (Castells, 2003), it is necessary to be clear about the importance of direct and efficient connectivity between individuals and not only in terms of infrastructure or between institutions (Castells, 2013). In this sense, one can not deny the relevance of the popularization of digital social networks, which through virtual private spaces, built by companies such as Facebook and Google, have connected people on an unprecedented scale. As people's online presence is consolidated, individuals ceased to be just information consumers in unilateral channels, where the flow was in a single path between sender and receiver, and became content producers and diffusers (Lemos, 2008).

The easiness of expression and access in these communicational spaces, allowing the rapid production, publication and search of content, was a determining factor in the accelerated formation of common interest groups that arose mainly from the 2000s. According to Clay Shirky (2012) the formation of these groups can be considered as "ridiculously easy", since virtual connectivity has reduced distances and facilitated the encounter between people and thematic. According to Shirky (2011), the cooperation found new tools to act with the increase of connectivity, impelling the forma-

tion of groups that act with convergent purposes.

When the possibilities of meeting individuals with similar yearning and willingness to cooperate on common issues (Shirky, 2012) were due to political contexts, the number of people involved became much larger (Castells, 2013), and we witnessed social events such as the Arab Spring, the Kitchenware Revolution (Iceland), Occupy Wall Street (USA) and the Jornadas de Junho (Brazil) (Harvey, 2013). Clearly, these political protests are not an invention of network society, but the proportions that these manifestations reached in 2011 (951 cities in 82 countries) and the global connectivity between them, allow us to classify them as "a new kind of social movement" (Castells, 2013).

This research is not intended to address the social movements that emerged in this context, but rather to understand their tactics, mechanisms and strategies to investigate possibilities of community engagement in favor of urban space, ie to investigate how digital social networks can drive processes of urbanism bottom-up (Rosa, 2014).

Clearly, the processes of bottom-up urbanism were not created by the network society, but gained, as well as these social movements, new possibilities from it. Even if it can not be said that this is a direct link, it is possible to establish relations between social movements such as the Jornadas de Junho and the bottom-up urbanism movement that takes place in Largo da Batata. In this sense, it is possible to affirm that social movements articulated by social networks were important learning processes, through which we experience in practice the use of cyberspace as a place of social engagement.

As in the Jornadas de Junho, the bottom-up urbanism movement that takes place in Largo da Batata occupies a physical space but articulates its actions through digital social networks. Its impact is perceived also on social networks, through the logics of sharing and interacting, building on this private space the horizontal room for dialogues between the actors involved.

The choice of Largo da Batata as a case study is due to its recent history. Already consolidated as an emblematic space of the city of São Paulo for historical reasons, the Largo passed through a controversial process of "urban reconversion" between the years of 2007 and 2011. Several are the controversies and questions that involve this reconversion project, but what was discovered when removing the sidings of the construction was the perception of amazement of citizens when they see a space before surrounded with life and passion to be converted into a dry square, gray and lifeless. In this context, little by little, several groups were engaged to occupy Largo da Batata and transform their inhospitality into an inviting leisure space.

What is presented next is a small part of an ample research that seeks to investigate through digital social networks the process of bottom-up urbanism that occurs in Largo da Batata. The results obtained are also presented by graphs and the proposed discussions reflect both on the selected case study and on general aspects of bottom-up urban planning processes.

METHOD

The first methodological step was the choice of Largo da Batata as an object of study that considered not only its recent history but also i) the longevity of the promoted bottom-up urbanism actions; ii) the permanence of physical occupation in space; iii) prior knowledge regarding the space and its context.

The choice of Facebook as a digital social network space to be analyzed took into consideration i) the fact that it is the most used digital social network in Brazil; ii) the availability of a large volume of open data that could be exploited (it is worth mentioning that this availability of data is no longer the same one due to new constraints imposed by the Company); iii) the availability of API's in the platform itself facilitating data extraction; iv) the fact that it is the digital social network most used for urbanism bottom up purpose in the present case studied.

Once Facebook was adopted as the communicational space to be analyzed, the investigations pointed out that the best way to obtain data about the dynamics of the bottom-up urbanization process would be searching for groups created within Facebook itself. Through previous research, it was pointed out that the group most suitable to be investigated was the group "A Batata Precisa de Você" (Id: 259834324182947). This decision was based on i) the number of members (6.553) participating on the group; ii) the flow of activities and posts in the group; iii) the diversity of topics covered; iv) the connectivity between the dialogues of this virtual space and the actions that took place in the square; v) the participation of the members present in the virtual space also in the physical activities in Largo da Batata.

Having selected the group to be analyzed, the next step was the choice of the data extraction method for which the Netvizz API was adopted. This toll may become inoperative due to the new privacy policies adopted by Facebook. Through this API and the tool "Group Data", data were extracted from all the postings made in the group between March 21, 2014 (date of creation of the group) and December 29, 2017 (time cut adopted by research).

In total, each of the 6,107 posts extracted were systematized according to 15 variables: "type" (type of posting: videos, links, photos, notes and status), "by" (numerical identification of the person responsible for the post), "Post-id" (identification of each post held by a number series). "Post_link" ("post_message"), "picture" (virtual address for low-resolution access to posted images), "full_picture" (virtual address for high-resolution access to posted images), "link" (electronic link of links that have been posted in the group), "link_domain" (owner of links posted in the group), "post_published" (date with year, month, day and time that the post was made), likes_count_fb (number of likes a post received), "comments_count_fb" (number of comments a post received), "reactions_count_fb" (amount of reactions - emojis - a post received added to the amount of likes), "share_count_fb" (number of times a post was shared), "engagement_fb" (metric by the sum of reactions, comments and shares a post received to verify it engagement power).

All systematization took place initially by means of data and of variables assigned, and, for analysis purposes, by graphs.

Metrics for analyzing the involvement of individuals with posts were also created. To do so, 3 possibilities of interaction offered by Facebook were used: reaction, comment and sharing. Reactions are less qualified, but faster and more usual forms of interaction users have with the content found on Facebook. They can be performed by both the "like" button and its emotionally variables. The comments, intermediate interaction at the level of involvement, requiring greater availability of user time and reasoning. Comments means you can give an opinion about the content or you can create a hyperlink with another user who wants to access the same content. Finally, the more qualified but rarer form of interaction presupposes that the individual not only relates or directs to other specific members but incorporates the content into his "private" area of production, as well as disseminates it to all members which he is connected directly.

The next step of the research was the filtration of the systematized material, which allowed searching through the posts presented in the group, events promoted in Largo da Batata. Thus, a non-automated search step was started, in which the search for events in the database constructed in the previous stage indicated the paths to the official pages of each selected event. The search for events also indicated other pages that gathered data about events held at Largo da Batata, such as a virtual calendar (http: // largodabatata.com.br/) and other Facebook groups that, although smaller, also promoted events.

All the events were analyzed and their information was systematized in spreadsheets that were organized according to name, time, place, organizer name, organizer category, access link, description, number of inviteds, number of interested parties and number of people who confirmed presence on the event.

RESULTS

In total, the 6,093 posts made in the analyzed period received 74,594 reactions, 21,279 comments and 1,262 shares. The "Graph 01" presented in the sequence demonstrates chronologically the flow of postings and the interactions with them.

As can be seen, the flow of posts is below the volume of reactions and comments, but higher than the shares. However, it is worth noting that over time, even if there is a drop in the post flow, there is a significant change in the volume of "shares". More precisely, as of September 2016, the volume of this interaction, the most qualified, came close enough to the others.

"Graphs 01A, 01B and 01C" also illustrate the performance of "shares" by presenting the trend curve of each of the interactions compared to the post flow. As you can see, there is a slight drop in the

level of reactions and comments, but the shares express significant increase in their flow.

The "Graphic 02" indicates through which medias the individuals most communicated in the group, that is, of the 6,093 posts analyzed, 2,264 were "photos" (37.2%), 1,449 "links" (23.8%) , 1,426 were "status" (23.4%), 539 were "events" (8.8%), 414 were "videos" (6.8%) and only 1 "note" was made.

"Graphs 03A, 03B and 03C" are complementary to "Graph 02", and demonstrate how each of the 6 post categories received interactions. In "Graph 03A", for example, it is possible to verify that the category of photos, representing 37.2% of total posts, received 51.6% of total "reactions". The "links" and "status" categories, which account for 23.8% and 23.4% of total posts, received only 19.6% and 17.6% of total reactions, respectively.

In "Graph 03B" it is possible to check the total "comments" that each of the categories of post received, highlighting the status category, which represents only 23.4% of the total posts but receives 34.1% of total comments.

"Chart 03 C" indicates the interaction by sharing and shows a behavior very similar to "Chart 03 A".

The results obtained in the analysis of the events indicate that a total of 125 organizers promoted 276 events between April 2014 and December 2017, which Graph 04 presents in a chronological way. As can be seen, between ups and downs the volume of events remains with reasonable constancy throughout the analyzed period, with a slight fall in the trend curve. Although "Graph 04" shows a peak in August 2016, it is noteworthy that this is an atypical phenomenon in which a traveling theater group has temporarily installed itself in the Largo promoting sequential events.

As can be seen in "Graph 05", the most active event promoter (22.5% of the total number of events held) has a decreasing volume of activities, going from 35 events in 2014 to only 1 event held in 2017. On the other hand, although they are more recent, some organizers with a smaller volume of realized events have acted with more constancy last years. In addition to the activities of the 2 main organizers, it reaches 28% of the total number of events (77 events out of a total of 276), ie the other 123 organizers accounted for 72% of all events.

In terms of popularity of events, the survey also used the three forms of interaction available to the public to relate to the events, namely: invitation (less-skilled interaction occurs when a person is invited to participate in an event), demonstration of interest (intermediate interaction occurs when a person demonstrates an interest in attending an event) and confirmation of presence (more qualified interaction occurs when a person virtually confirms presence at an event). In total, the 276 events received 280,056 confirmations, 223,259 interesteds and 1,094,177 invitations.

"Graph 06" demonstrates chronologically the volume of events organized and the interaction of the public with them. By means of this graph it is possible to observe that although there is a reduction

in the number of events throughout the analyzed period and a small tendency of decrease in the number of inviteds, the number of interested parties remains constant and the number of confirmed presents a significant increase. At the end of the analyzed period the number of confirmed people in events surpasses even the number of invited and interested parties. The fact that this phenomenon occurs at the end of the analyzed period leaves doubts whether it is a sporadic phenomenon or a trend, but "Chart 06 A" shows that an increase in the volume of confirmed participants is a trend from the beginning of the temporal clipping analyzed.

DISCUSSION

The fact that the gradual increase of the most qualified interactions with the postings occurs even with the decrease of the total flow of postings may indicate a qualitative improvement of the communication process and a consolidation of the group that cooperates in the process of bottom-up urbanism.

It is possible, therefore, to work with the hypothesis that with the passage of time, although the volume of activities is smaller, the group that works with them becomes more consolidated. In this sense, the analysis of the interaction of the public with the events can be a complementary indicative. After all, as shown in the results, even though there was a reduction in the number of inviteds for the events, there was a significant improvement in the number of confirmed participants, which may contribute to the hypothesis created.

It is worth noting, however, that in mentioning "group", in the case of this process of bottom-up urbanism, it is not a uniform group, but several subgroups and individuals who engage in the practice of bottom-up urbanism and use the Facebook group created by them, inclusively, for the debates and conflicting decisions regarding the transformations and uses of Largo da Batata.

As can be seen in Graph 05, the large subgroups, which promote the largest number of events individually, have not been able to ensure the continuity of their activities. It was the small groups, mostly promoting only one event, that guaranteed the frequency and longevity of the actions promoted in Largo da Batata.

In this sense it is important to mention that one of the initial hypotheses of the research was that the great organizers would be responsible for the longevity of events, perhaps elaborated on a rational tendency to seek centralities. However, as Steven Jhonson (2003) describes, the mapping of data and dynamics may indicate that organizations, including city dynamics, are, in practice, managed by bottom-up systems.

Further analysis of the largest event organizer at Largo da Batata indicated that this group had re-

ceived public funding through a notice of the city hall of São Paulo, and that the sharpest drop in its activities occurred after this process has end (they had committed to carry out activities in Largo da Batata between January and June 2015).

This research cannot affirm with absolute certainty that the fall in the production of events of this group is the result of the end of funds, however from the already verified and the specialized bibliography, there are some discussions about it. One of the discussions that can be raised concerns the role of public funding for a community practice, reversing the logic of collaboration for the contracting of services, which may be a practical demonstration of the symptoms pointed out by Shirky (2011) when substitution of the cooperation link for the manifestation of a relationship between hired and contractor.

"Graphs 02, 03A, B and C" although they have no claim to become tutorials in relation to group communication, indicate interesting strategies for bottom-up urban planning processes. The main highlight point out in this result, is the potential of the communication via status, in which the sender communicates in the first person, through comments. Perhaps this is an indicative of how direct communication is important for the construction of dialogue.

There are also two important reflections throughout the research. The first one concerns the role of the Public Power in the processes of bottom-up urbanism. To what extent should State act and to what extent should this power consent to the decisions taken by the group? In a complementary way, the second reflection questions how to ensure that the transformations carried out by bottom-up urbanism are of public nature and not privatization or of the exclusive benefit of the group that acts.

In this sense, the processes of bottom-up urbanism seem to emerge as a third actor of urban transformation, leaving more complex the duality between public and private urban transformations.

As a conclusion of the discussions, from the point of view of the historical evolution of urbanism, the philosophical question that appears is to reflect if the processes of bottom-up urbanism aim to create a space that is ephemeral and subject to constant appropriations and transformation, having the construction and self-destruction as inherent parts of its process, or if it is a community practice that can arrive at collective definitions, however static and "traditional" from the point of view of architecture and urbanism. Briefly, the process and the product are changed or just the process?

If the tendency to change the process and the product gain strength, then perhaps we are initiating a new genre of architecture and urban design, in which network infrastructure, mediation processes, virtual spaces and data analysis, among other variables, will become the "toolkit" of architects. We would thus be projecting the space of appropriation, not the final form, which would break the concept of project as an instrument of control.

Clearly, and because of the contemporaneity of the theme itself, this text does not have the preten-

sions of closing issues or narrowing specific themes. Its purpose, instead, is to illuminate with a little scientific advance a new area within the urbanism that is beginning to gain value.

GRAPHS
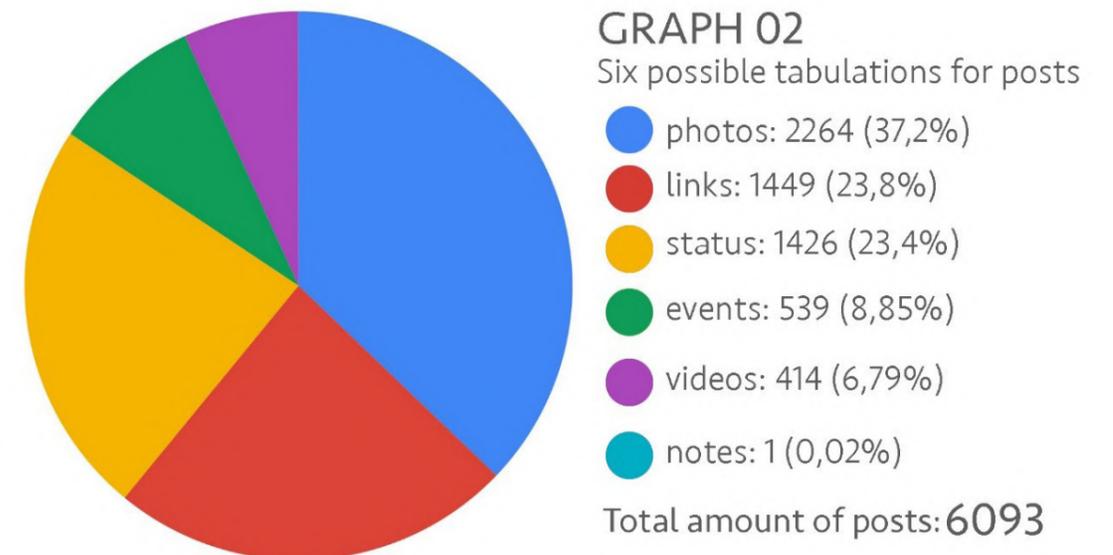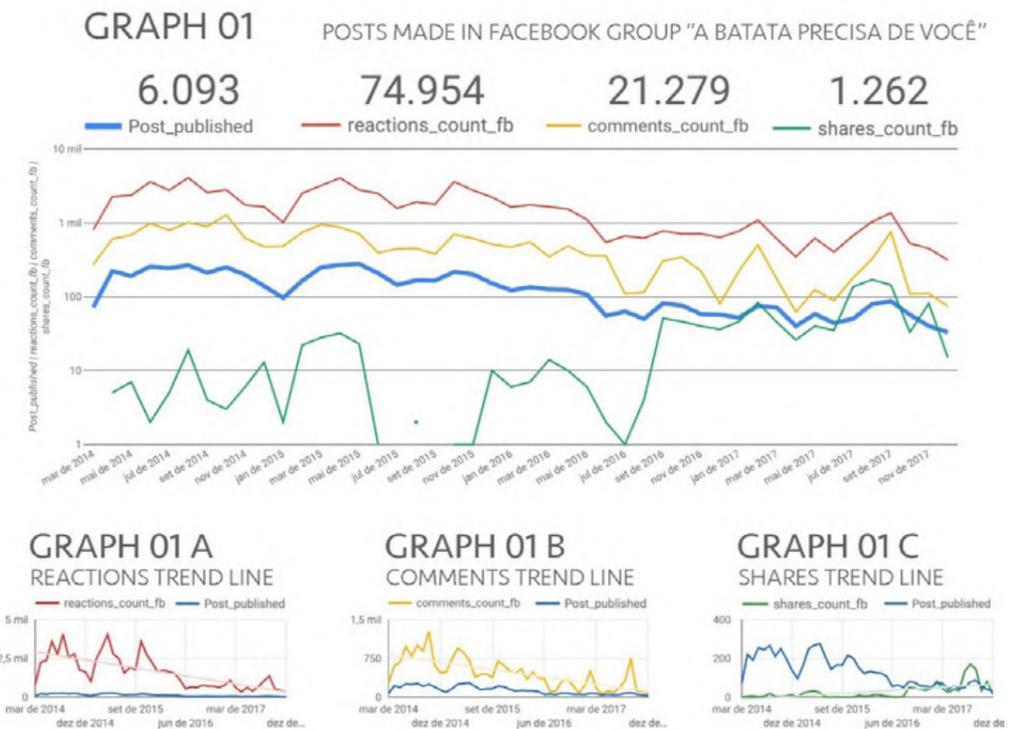
GRAPH 03 A

Number of reactions that each of the tabulations received.

- photos: 38644 (51,6%)
- links: 14674 (19,6%)
- status: 13212 (17,6%)
- videos: 4539 (6,1%)
- events: 3882 (5,2%)
- notes: 0 (0,00%)

Total amount of reactions: **74954**

GRAPH 03 B

Number of comments that each of the tabulations received.

- photos: 9820 (46,1%)
- status: 7251 (34,1%)
- links: 2604 (12,2%)
- videos: 845 (4%)
- events: 759 (3,6%)
- notes: 0 (0,00%)

Total amount of comments: **21279**
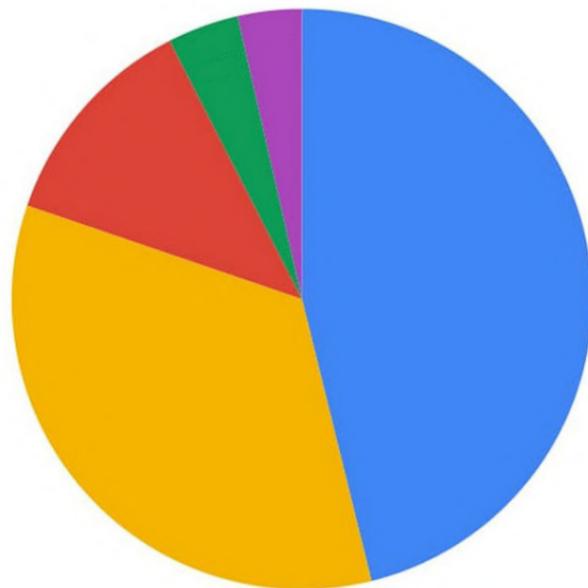
GRAPH 03 C

Number of shares that each of the tabulations received.

- photos: 635 (50,3%)
- links: 285 (22,6%)
- status: 160 (12,7%)
- videos: 116 (9,2%)
- events: 66 (5,2%)
- notes: 0 (0,00%)

Total amount of shares: **1262**
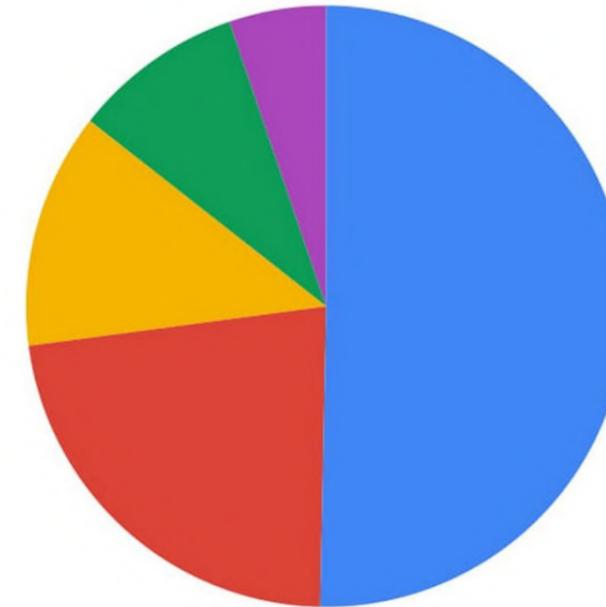
GRAPH 04   Chronology of all events.

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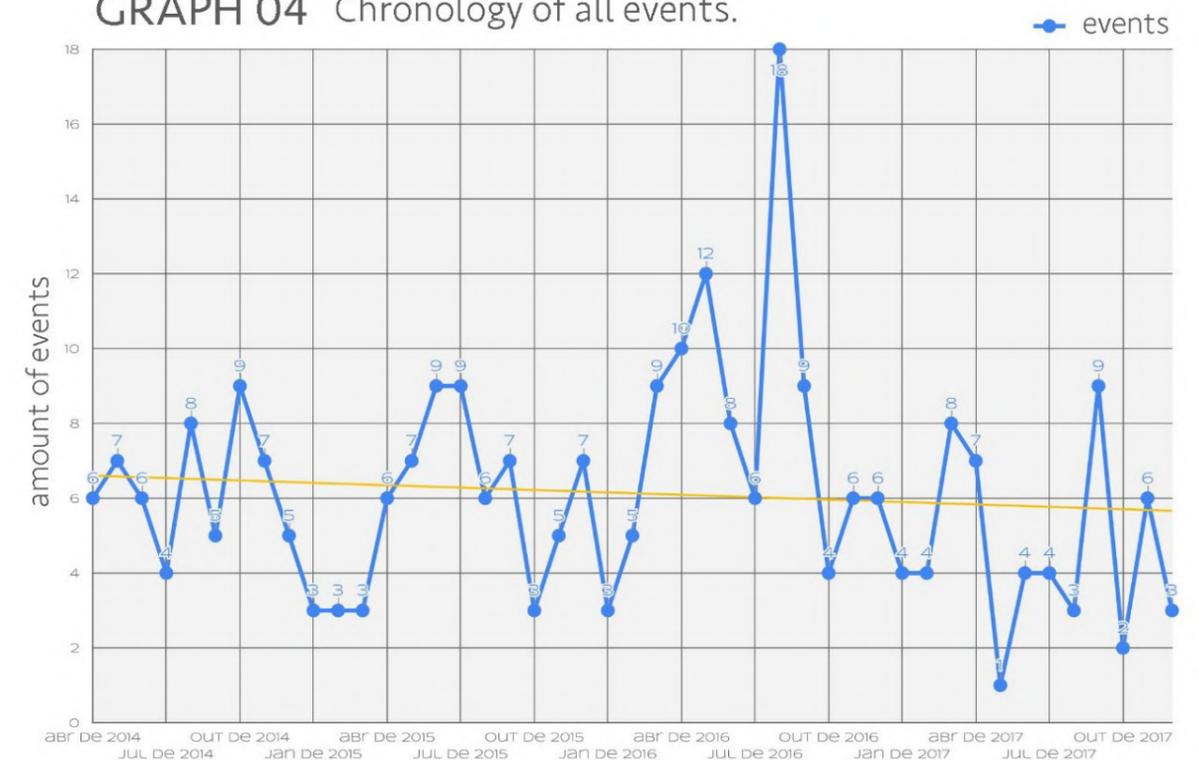
GRAPH 05 PERFORMANCE OF THE MAIN EVENTS ORGANIZERS
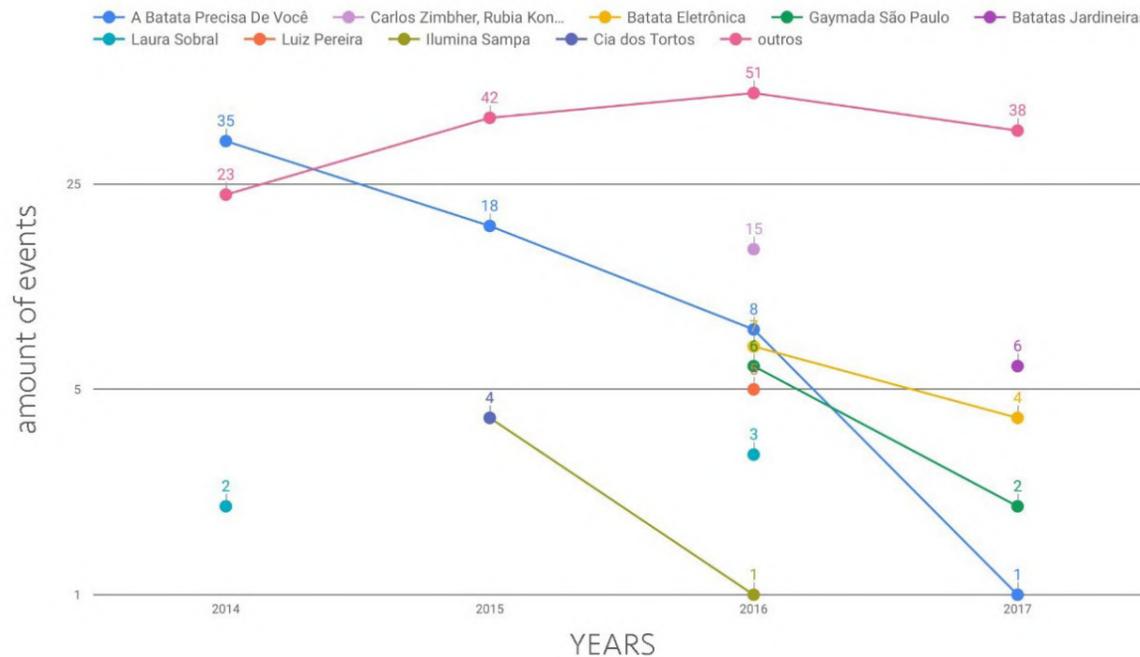
GRAPH 06 POPULARITY OF EVENTS PROMOTED

GRAPH 06 A
"Going" trend line

GRAPH 06 B
"Interested" trend line
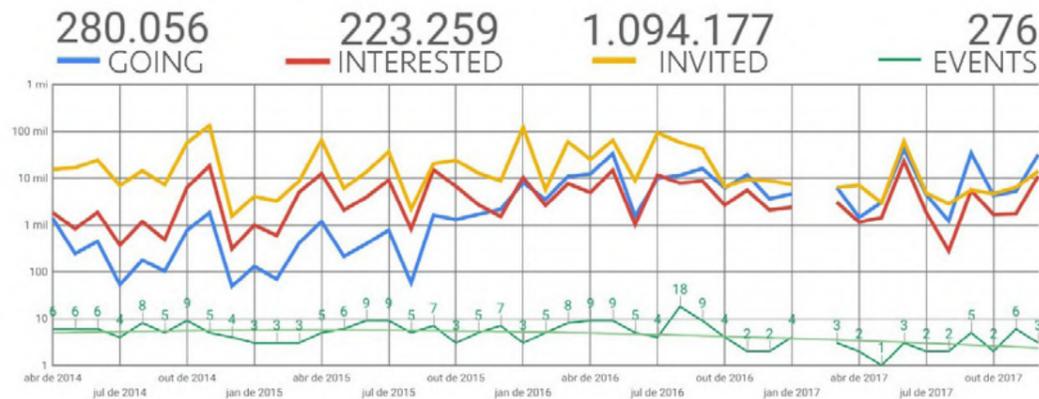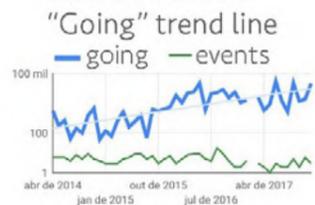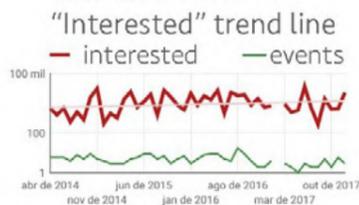
GRAPH 06 C
"Invited" trend line
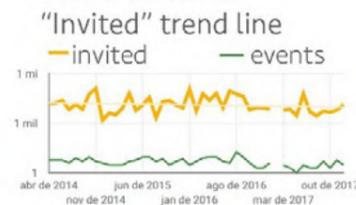
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Analysis of Urban Regeneration in unused urban area, characterized by the degradation of the public space: the case of abandonment of an old edification of the city of Franca, São Paulo, Brazil

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ABSTRACT

The great majority of Brazilian cities, especially those of small and medium size, have been consolidating and irradiating in a disorderly way, mainly with the increasing urbanization that occurred in the 1950's, as a consequence of the need to supply, quickly, emergencies in housing and in basic infrastructure for an urban population that increasingly spread and expanded considerably fast, so that the urban mesh of cities development in an indefinite and unplanned way, in an attempt to withstand this demand has resulted in a series of urban phenomena, among which the present article aims to study, in a more specific way, the unused urban area. The present paper aims to understand some basic considerations and concepts about the Urban Regeneration process in unused urban areas, as well as to analyse the disregard for the public space of the city of Franca, located in the interior of the state of São Paulo, Brazil, is characterized by your sparse urban growth, by "jumps", in a way that entails the disorderly and often unnecessary irradiation of its urban mesh and the emergence of unused urban areas, in which areas that are not exercising their social function are accumulated in several alternating points of the municipality, in a way to cause the devaluation of your surroundings, besides contributing to the insecurity of the place, in particular, the case of abandonment and degeneration of the theoretical construction of the *Regional Treasury Department of the State of São Paulo*. The old enterprise has been unfinished and underutilized for more than two decades, presenting itself as an unused urban institucional area in a noble neighborhood of the city, denominated "Jardim Lima", valued and of notorious flow of individuals, the use of a public area of great potential in the municipality. In addition, through research, bibliographic surveys and qualitative analysis, through consultations with the local population, it was intended to address, with this article, possible forms of urban regeneration for the building in question, with the purpose of proposing, in this way, its use and the consequent improvement in the urban landscape of the city, besides contributing to a greater appreciation of its surroundings and to the reduction of the insecurity and the marginalization existing in the place. In line with this problem, it was tried to understand the importance of the use of the urban space, whether public or private, whether or not built, to carry out their social functions, seeking to improve their surroundings, making a more inhabited, inviting and productive urban space, aiming to attend to the wishes of your population and to effect a city full of diverse functionalities and potentialities for that the people that inhabit in it enjoy them.

KEYWORDS: Urban Regeneration; Unused Urban Area; Public Space.

INTRODUCTION

In most contemporary Brazilian cities, are ubiquitous abandoned urban spaces. Due to the increasing urbanization of the 1950's, the disorderly and undefined urban sprawl of the cities aimed at rapidly providing housing emergencies and basic infrastructure for a population that was spreading considerably fast in an attempt to withstand such demand. Thus, a series of urban phenomena was occasioned, among which the present article aims to discuss about the unused urban area.

Being a term possessing considerable scope, the unused urban area can be understood, in a general way, as any and every public or private area, whether or not built, that is not exercising its social function in urban space. In addition, according to Dittmar (2006), the term unused urban area is configured, firstly, as empty of use, in which there is construction on the ground, but it is abandoned, besides the physical emptiness, in which the surroundings of the area presents all the necessary infrastructure to be properly used, however remains unoccupied.

In congruence with this same author, the unused urban area arise through three circumstances, being characterized as urban remnants, idle areas and waste spaces. Urban remnants can be considered as discontinuities and remnants of urban reconfigurations of changing areas, so to speak, a space that has been assigned a use in the past, but which is abandoned, configuring itself as an urban space empty of use. Idle areas are understood as physical emptiness, since they are underutilized spaces, often due to real estate speculation. Residual spaces are the remaining areas resulting from urban morphology, being considered as physical and as use voids (DITTMAR, 2006).

Therefore, the sparse urban growth that occurs in the city of Franca, located in the interior of the state of São Paulo, Brazil, is one of the main factors that lead to the disorderly and often unnecessary irradiation of its urban mesh, in order to result, among other urban problems, in the emergence of unused urban areas, in which areas that are not exercising their social function are accumulated in several alternating points of the municipality, in a way to cause the devaluation of their surroundings, besides contributing to the insecurity of the place, in particular, the case of abandonment and degeneration of the theoretical construction of the *Regional Treasury Department of the State of São Paulo*. The old enterprise has been unfinished and abandoned for more than two decades, presenting itself as an urban remnant in the city, in addition to being configured as an empty urban space of institutional use, in a noble neighborhood of the city, called "Jardim Lima", valued and of notorious flow of individuals, aiming to propose, thus, the use of a public space of great potential in the municipality.

LITERATURE REVIEW

Different processes of transformation take place in cities, which result from the interrelations between internal and external forces, in order to encourage the development of urban policies as a form of intervention, providing a response to the various problems (IGREJA, 2016). Thus, due to the type of consolidated urban growth in the city of Franca, the unused urban areas are one of its main problems, causing in specific degenerations in the fabrics of the urban mesh of the municipality.

In view of this thought and according to the explanatory of Mendes (2013), as an attempt to counteract the forces and factors that are the main responsible for the urban degeneration of a territory, Urban Regeneration (UR) arises, in which the idea of improvements in urban space is associated to the functional development of the same, in an attempt to appease a certain urban decline, that is, a physical and social difficulty lived in urban space (GINOT, 2010 apud IGREJA, 2016). In addition, in the introduction of the book "Urban Regeneration: A Handbook", the authors Peter Roberts and Hugh Sykes (2000) refer to Urban Regeneration as a type of urban intervention experienced in the last decades, although still little assimilated in relation to a consensus about your conceptual definition (MENDES, 2013).

In Biology, regeneration is a process understood as the ability of the tissues and organs of living organisms to renew and recover after considerable physical damage that has degenerated them, in some way. In front of this same thought, the direct, transitive and pronominal verb "to regenerate", in its definitions, indicates to generate, to construct, to develop or to produce again, to give new life to something.

Through the organicist view of Modernist Urbanism, urban spaces are characterized by dynamism, complexity and vitality, thus becoming organisms of constant modification and adaptation (IGREJA, 2016). Certain urban phenomena contribute to the degradation of public spaces and the consequent degeneration of the fabrics that constitute the urban mesh of the cities.

Hypothetically, if a type of use is attributed to be exercised by the urban remnant in question, aiming to promote development in social, environmental, cultural, economic, physical and real estate, that is, generating urban modifications that the regeneration process has as objective, there would be a greater appreciation of its surroundings.

In this way, the present analytical research aims to seek the understanding of a possible application of the Urban Regeneration process in the unused urban area of established institutional use, in order to propose, therefore, the utilization of the reported urban remnant, that is, the abandoned public building of the city of Franca, in order to make explicit about the importance of the social function of property and the creation of development axes that stimulate the creation of employment in an area of great potential when it comes to location and infrastructure issues.

Therefore, an understanding was sought about the need for regeneration in locations of point degeneration, which are identified as damaging to urban tissues and, consequently, to the urban mesh of the city. Beyond this, it was sought to report on the importance of using urban space and the duty of city areas, whether public or private, whether or not built, to exercise their social functions,

seeking to promote the improvement of their surroundings, making it a more inhabited, inviting and productive urban space.

METHODOLOGY

The analysis was based on a qualitative method, presenting a theoretical basis in which, initially, bibliographical surveys were carried out on the subject, through scientific books and articles, with the purpose of obtaining a understanding of the process of Urban Regeneration, discussing its possible definitions and concepts, and discussing the possibility of its application in an existing urban remnant in the city of Franca, São Paulo, which causes the degradation of the public space of its in order to obtain more detailed information about the unused urban area in question.

Besides this, the method also presents an experimental basis, in which a field questionnaire was carried out and applied in the vicinity of the abandoned public building, located in a residential urban area of the city, with the purpose of carrying out a survey of data for the realization of a resultant analysis about the inhabitants' notorious dissatisfaction with this neglect of the public space of the area.

In order to arrive at a certain result, a method with a qualitative basis was necessary, seeking a deeper understanding of the aspects related to the Urban Regeneration process, in manner to understand its concepts and applications, besides the modifications that this type of intervention usually promotes the urban tissue of cities.

Furthermore, in view of the qualitative nature of the applied methodology, more concrete information was sought on the area to be analyzed, which includes the abandoned and unused building of the theoretical *Regional Treasury Department of the State of São Paulo*, presenting itself as the most notable urban emptiness of use of the city of Franca, located more specifically in the interior of the state of São Paulo, in the Southeast region of Brazil. In this way, the acquisition of data on the urban remnant in question was consolidated through researches with the city hall, documentation, archives and texts found, thus allowing a better foundation with regard to the real problems of the locality, its features and history.

In the interest of obtain additional information on the exposed urban problem, a consultation was carried out with the population of the city, by means of interviews in the place, in order to apply a field questionnaire, containing eight questions, to the pedestrians whose route crosses the abandoned building area. Thus, it was intended to understand, through the fifty people interviewed in the areas surrounding the urban remnant, what are the real dissatisfactions and perceptions of the population that lives there, lives or only uses the area as part of their daily routine, obtaining data of qualitative character, although they also present statistical characteristics of quantitative foundation.

In order to conduct the consultation to the population, through interviews in the field, we opted for a schedule with a remarkable flow of individuals, and the working hours of the majority of the inhabitants of the city, from seven to eight o'clock in the period morning. The process was repeated for five days, the same day of the week, on fridays, obtaining ten interviews a day, in a sum of fifty analyzes

of the population.

DISCUSSION

The social function of a property presents itself as having a notorious importance for the city, since it contributes to the development and the punctual valorization of a certain area, which, along with the other functionalities of a municipality, comprehensive urban dynamics. Such functions can be identified as "vital" in a city, since they are responsible for their performance, so as to meet the needs of the population living there, contributing to the expansion of employability, housing and education for citizens, as well as, often contributing to a greater economic development of the locality.

However, the phenomenon of unused urban areas, caused by a series of factors in the cities, contributes to the punctual declination of a locality and can be identified, in many cases, as a degenerative point in the urban tissue, that is, a microinjury that, through various manners, is responsible for problems and dysfunctions that exist throughout the urban tissue of its surroundings.

According to Clemente *et al.* (2011), the term unused urban area refers to portions of land or buildings located in urban areas devoid of use and occupation, causing in a negative connotation in the city due to its unproductiveness, although it brings, in essence, a expectancy, representing the possibility of a future intervention.

From this point of view, the unused urban area located in an land of institutional use of the Jardim Lima neighborhood, in the city of Franca, as mentioned previously, on which this article aims to discuss, presents itself as a property of remarkable municipal district, presenting considerable potential for the purpose of exercising a function that meets the needs of the local population and which contributes to a comprehensive strategic process that promotes the development and sustainability of the city, an important issue nowadays.

Figure 1 – Remote sensing image of the surrounding area of the abandoned building in analysis.
Source: SAS Planet (2019).

However, through surveys and interviews carried out in the locality with the inhabitants of the area surrounding the urban remnant studied, it was verified that the abandoned building contributes gradually to the real estate devaluation of the residences and other constructions of its surroundings, since the marginalization and the crime are social problems existing in the unused urban area, which contributes to the consolidation of a degenerative condition of its surroundings. In addition, the building in question is in a critical physical state, since it is a place devoid of hygiene care, possibly leading to the concentration of residues and the proliferation of disease-transmitting mosquitoes due to the accumulation of water that is often in place, as explained by data already reported by the news of the city, in 2017.

The six-storey building, originally owned by the city of Franca, was donated to the Government of the State of São Paulo. It was built more than twenty years ago in the early 1990's and was destined to the *Regional Treasury Department of the State of São Paulo*, however, its construction was not completed and only its gross structure was erected, which led to its popularization and recognition as the "Skeleton" of the municipality.

Figure 2 – Abandoned building in study. Source: Personal Archive (2019).

In agreement with researches and documentations, in 2006, the property was passed on to the Federal Regional Court by the Government of the State of São Paulo, with the purpose of installing the Federal Justice headquarters, but the project was not pursued. Recently, in 2017, the urban remnant was donated by the State of São Paulo to the city hall of Franca, which took some not very efficient measures with the place, such as the installation of a night watchman in the locality, aiming at greater

security for the neighborhood residents. However, the insecurity still hangs over the place since the marginalization still persists.

In spite of all the physical degeneration of the unused urban area in analysis, presenting several problems in this issue, in addition to its precarious environmental and economic condition, the social barrier is one of the main causes of the need for a regenerative intervention, which would promote, through its comprehensive and strategic methodology, the functional change or restructuring thereof.

Since its abandonment, becoming an urban remnant before it even exercised its initially established function, the building has contributed significantly to increasing insecurity in the population that lives in its surroundings. Also, the unused urban area became a place for the spread of illicit drugs and refuge to the marginalized individuals of the city, who used the highest pavement of the building to spy on the daily life of the surrounding residents, affecting their privacy and hurting their right to come and go, in order to contribute to the real estate devaluation of the homes that are conducive to this problem, according to the local residents in interviews conducted in 2019.

From the moment it was ceded by the Government of the State of São Paulo, the abandoned building became the responsibility of the municipality, which would be accountable for expenses with a future intervention. However, the complexity found for a possible reform of the building due to the scarcity of funds of the municipality makes the initiative of consolidation of a project by the city hall be a hypothesis currently discarded, according to data from the news of the city, in 2017.

Moreover, there is a great social disparity in the neighborhood in which the building is inserted, due to the production of the spaces through the capitalist optics of the XXI century, causing in the local degeneration in the locality at the level of social, physical, economic and environmental conditions. In accordance with Maricato (2001), the disparities found in the urban mesh of the cities reflects the social relations of a society full of inequality, due to the complex process of management of the public sphere, in which economic and political power influences the application of laws, as well as privileged relationships for a portion of society.

The Federal Law N° 10.257, of year of 2001, known as the *Statute of The City*, was developed with the purpose of ensuring the full development of the social functions and urban urban property of the city, in order to affirm its principles, objectives and guidelines for management. In Brazil, all cities with more than twenty thousand inhabitants contais a Municipal Director Plan, wich is one of the instruments foreseen by the Statute, being responsible for the future planning of cities, in terms of social, economic and political conditions.

Although it is a very little used and recognized concept among urban interventions in Brazil, the urban regeneration presents itself as a process that aims at the reorganization and improvement of already existing areas (IGREJA, 2016). Also, in conformity with Mendes (2013), the notion of improvement, in the case of the UR, arises in an associative way to the functional development of an area, providing to it a greater visibility and a greater prominence in its positioning in a given territory, responding to a process of decline.

The authors Roberts and Sykes, according to Mendes (2013), refer to Urban Regeneration as a result

of the relationship between exogenous and endogenous forces, which dictate the need for constant adaptation, thus being in its nature a dynamic phenomenon, and not static, which makes it very difficult to grasp a single conceptual definition, containing all the particularities that its practice makes possible in urban planning.

Thus, there is a distinction to be made between the process recognized as "urban renewal", in which only an essentially physical change is consolidated, and the process of "urban regeneration", in which investment recovery is sought and improvement of the quality of life in the urban area, as explained by Valle (2008) when citing Chris Couch.

It is of the utmost importance that the city be inviting to people, so that they coexist more in urban space (GEHL, 2013), which does not occur in the city of Franca. The streets and sidewalks of a city, considered to be its "most vital organs", are the main public places of the urban space, in agreement with Jacobs (1961), results in a degenerative process that surrounds the degraded building, occurring the insecurity in its surroundings.

Therefore, cities represents a vital role in providing quality of life for their inhabitants. Urban Regeneration is a great opportunity to act in the degraded area and offer a strong strategic, integrated and comprehensive response to the a city in the social, political, economic, physical, environmental and cultural spheres (IGREJA, 2016).

RESULTS

With the assistance of the applied methodology, two types of results were obtained: a qualitative one, through the bibliographical surveys carried out, and a quantitative one, obtained with the application of an questionnaire to the local population. Through the experimental basis, during the established methodological process, was verified that of the fifty inhabitants interviewed in the place, in its totality, more than 50% did not obtain the knowledge about the urban remnant be a public building, which proves that the population locality has no interest in the issues of its city, something characteristic of the culture of the locality, in which there is the concern and the participation of the citizens in the conditions of public policies of the municipalities. Moreover, within this totality of interviewees, about 90% agree that the degenerated area in question brings not only physical, but also social, economic and environmental damage.

Through analysis, it was found that a large part of the local population can not clearly notice that a possible modification of the area, within a regeneration process, would reduce the existing crime rates around the urban remnant, aiming for greater security to the individuals who live there and live together, since the lack of action of the public agencies contribute to the low expectations of individuals.

CONCLUSION

The process of degradation coming from the unused urban area in question spreads by the urban tissue of the city through a degenerative aspect, causing in a series of urban problems of diverse

scopes. In considering the city as a living organism in constant modification, according to the organicist optics mentioned above, it is clear that the degenerative process makes the city less efficient, so that it does not function in its full conditions, leading to higher expenses and affecting the whole urban mesh of its surroundings, degenerating even its most important organs, its streets and its sidewalks.

In this manner, Urban Regeneration is a new urban policy that develops multiple intervention strategies, planning a set of coherent actions that would enhance the functional, socioeconomic and environmental values of the urban remnant analyzed, in order to provide a more dignified quality of life to the population and to reclassify the existing city (COCHRANE, 2007; TALLON, 2010 apud MENDES, 2013).

In this context, the proposed methodological procedure sought to make explicit that the degrading situation existing in the unused urban area would be reversed only through an integrated and strategic process aimed at solving urban problems and generating lasting changes in the locality in all possible physical, social, environmental, economic and cultural conditions, which would only be possible with the application of the Urban Regeneration process in the space of the city, as a response to the challenges that lead to the degradation of the urban remnant and the consequent degeneration of the entire urban mesh adjacent to it.

Additionally, only a physical modification of the place, as proposed by the renovation process, would not be sufficient to promote the improvement of the locality, since the social disparities found in the place and the existing insecurity in the streets of the neighborhood are problematic of social character that do not would be easily resolved only with the renovation of the building.

Cities must be thought of as an interconnected whole and for this reason, regeneration presents itself as the most appropriate intervention process for the consolidation of a more inviting public space, since it encompasses different aspects which are an integral part of the concretization of a more humane, more just and more sustainable city.

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Mass Customization applied to the Minha Casa Minha Vida Program

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ABSTRACT

This article intends to make a critical reflection and a practical experiment on the possibility of applying the concept of mass customization in the Brazilian housing program called My House My Life (PMCMV). Through participatory processes enabled by digital tools.Through a review o defendf a selected literature on PMCM, the concept of mass customization and the application of digital resources in participatory processes, we developed an experiment where digitally processed algorithms transform controlled demands into architectural results. We hope to contribute not only to the discussion about the application of digital tools in architecture, but also to the PMCMV itself and to the way we produce social housing in Brazil.

KEYWORDS: mass customization; Programa Minha Casa Minha Vida; digital architecture, algorithmic architecture

PREAMBLE

Almost twenty years ago, researchers such as Branko Kolarevic and José Pinto Duarte defend the application of the concept of Mass customization to architecture and urbanism. Publications congresses and seminars promoted by these and other researchers have fostered reflections on the subject, with a growing number of supporters and reviews for specific realities from different parts of the world. This discussion takes the premise that we are producing architecture in a massive way and that it can be personalized individually with the help of digital tools (Kolarevic ,2015).

For Brazilian researchers, the comparison with the largest housing program in the country, the Minha Casa Minha Vida Program (PMCMV), is quite natural, since it"s the largest, in quantitative terms, social housing program in brazilian history.

PMCMV

Conceived by the Ministries of the Civil and Finance Office, in agreement with the construction industry, the Minha Casa, Minha Vida Program (PMCMV) has been facing difficulties with what some authors call a rather simplified reading of the Brazilian social housing problem, tryng to solve the Housing inequality according to productivist view, based, predominantly, on quantitative goals (RIZEK;

SANTO AMORE, CAMARGO, 2014).

In ten years of existence, millions of units were contracted and delivered, confirming this quantitative character, which seems to perpetuate more strongly the characteristics of previous programs, such as the experience of the National Housing Bank (BNH) (NOIA, 2016). facing the problem of housing from the financial point of view, relegating architectural and urban problems to the background.

Among the many frequent critiques of the program, we can mention the low percentage of funding dedicated to the so called Group 1, families with a gross monthly income of up to R $ 1,800.00 (RIZEK; SANTO AMORE; CAMARGO, 2014). Also, the search for cheaper land tends to drive away the enterprises from the urban centers, and the imposed urbanizations ignore the daily dynamics of the families, factors that make life difficult for the residents.

However, the focus of the present study is on housing units, and their inadequacy to families and their daily habits. The perpetuation of the model of minimum unity, sized for a hypothetical family, departs from reality, proving that the program serves more to the interests of those who build, than those who live in these houses.

The second phase of the program, started in 2011, begins to meet the demands of specific communities, promoting the reallocation of the population in precarious situations, and the urbanization of *favelas*. Also a new modality appears where the enterprise is organized and managed directly by popular entities of future residents, *PMCMV-ENTIDADES*. Thus, participatory methodologies are incorporated in the production of the projects, which, however, "do not come from the program's arrangement, but from a long history of struggle for housing" (NOIA, 2017).

However, the *PMCMV-ENTIDADES* is an exception within PMCMV, with a very limited number of examples, reflecting "the superficial way in which user / civil society participation is exploited, questioning its legitimacy and effectiveness" (NOIA, 2017).). In addition, it is important to remember that the *PMCMV-ENTIDADES*, along with the entire PMCMV Group 1, suffered the most from the 2017 budget cuts.

Although the participation of users in architectural and urbanistic definitions dates back to the 19th century, this option gained importance from the mid-20th century, mainly as a reaction to the post-war European technocratic and authoritarian planning (WULZ, 1986). At that time, authors like John Turner, affirmed that when residents control the decisions and contributes inte design, social well-being is stimulated (TURNER, 1969).

Curiously, at the same time, emerged some of the most well kown authors that wrote about the impact of digital tools in the production of architecture and urbanism. William Mitchel, Nicholas Negroponte, Yona Friedman and Christopher Alexander, launched their first texts between the 1960s and 1970s, with an immediate resemblance to the authors dedicated to the design participation, valuing the process, not the product.

Many of these authors promote the union between participatory processes and digital tools. Among

them, William Mitchell argues that if / then logic can provide answers and create scenarios with the necessary speed to work with communities, and present the results in a way understandable by non-specialists. That is, one can have obvious answers, as, for example, the predominance of an age group can define the demand for public equipment (more children = more schools). But one can get answers whose paths to follow are not so clear. For example, in situations where there are conflicts. If we are to accommodate two distinct communities in the same territory, with different customs and religions, the computer can help to create the scenarios, facilitating negotiations among those involved. (Mitchel, 1971).

In 1975, Yona Friedman published a proposal for a computational tool that would help the relationship between the architect and the user. Called Flatwriter, this tool would allow the future inhabitant to participate in the design process of your home.

Over the next few decades, other work has been added to the discussion, as well as other initiatives, such as the alliance called Computer Professionals For Social Responsibility (CPSR), which not only engaged in a variety of participatory experiences but also sponsored a biennial conference About the subject .

At the end of the decade of 1990, another fundamental work arises for the discussion. The doctoral thesis of the Portuguese researcher José Pinto Duarte, developed at the Massachusetts Institute of Technology (MIT) and guided by William Mitchell. Duarte appropriates the shape grammar, initially analytically, to study the project of architect Álvaro Siza Vieira for the so-called Quinta da Malagueira. An algorithm made the possible combinations of dwellings from the rules of each unit's implementation. The author defines the process as a Discursive Grammar, not Shape Grammar, since it generates not only forms, but a symbolic description, at a semantic level (NATIVITY, 2010).

DATA

The Information and Communication Technologies (ICT) revolution, the Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM) processes, ended the need to associate mass production with mass repetition (KOLAREVIC, 2004). A technological innovation, which allows interaction with consumers increasing their adaptability, and flexible manufacturing solutions from computerized numerical control (CNC) equipment. In this new system, the process is more important than the product: "New individual products flow from these flexible processes, capable of providing quick, but long-term and stable responses" (PINE, 1994, p.53).

In this context, emerges the concept of Mass Customization, a term coined in the 1980s that refers to the ability to offer customized products manufactored on a large scale with similar costs of a standardized products (PINE, 1994). It is not about the availability of varied products, but about consumer participation in defining or specifying the characteristics of these products. That is, not only products are offered, but the ability to transform them, or to define them, from previously available

possibilities. This means that attributes or characteristics of the product can be customized, forcing a customer-oriented and non-market-oriented approach (MACHADO & MORAES, 2010).

PRODUCTIVISM VS. MASS CUSTOMIZATION

When Henry Ford said that people could have the car in the color they want since it was black, he advocated the production system that evolved and replaced the so-called American System. Mass Production, or Fordism, was a direct heir to the previous system, perpetuating some of its characteristics, such as the use of specialized machines, the division of labor, and products whose parts could be interchangeable. However, it brought news that sought to meet the demands of an increasingly larger and more dispersed market in a huge territory (PINE, 1994).

In the second half of the twentieth century, the paradigm of mass production collides with social changes that are making societies less homogeneous, where diversities are increasingly valued and exploited by the goods and services industry (PINE, 1994).

Not only does it offer a greater variety of options, but its effective adaptation to specific demands. From insurance to sandwiches, from shoes to automobiles, personalization is a recurring practice that characterizes contemporary markets, establishing a new paradigm (PINE, 1994).

However, if in the majority of customization cases, we can change surface characteristics such as colors and add expandables elements, in the architecture the customization should allow for more substantial changes, such as the quantity and dimension of the rooms.

Considering that a building must have a greater durability than other assets, it is worth considering that the design will respond to the needs of a family at a specific time and that many demands will change over time. Thus, customization at the design stage is a freeze of demands at a given time, but it should consider future changes.

ARCHITECTURE CUSTOMIZATION

Different studies (VILLA; SARAMAGO; GARCIA; 2015) (SANTO AMORE; SHIMBO; RUFINO, 2015) have shown that the family compositions in projects financed through PMCMV are quite varied, confirming the inadequacy of the two-bedroom model. Therefore, the study of these variations can be a starting point for the design of customized housing units. If there is a discrepancy between the supply of identical units versus the variety of types of families and their numbers of members, it seems natural to imagine a customization not only in the quantity and size of the rooms but also in the relationships between them.

The collection of this information and its transformation into architecture depends on methodological definitions regarding the participation of future beneficiaries. Among the definitions that must be

established is the degree of participation, which can begin with an absolutely passive attitude of the beneficiary, where the architect represents his interests, until the self-decision, where beneficiaries make the decisions and the role of the architect is to ensure that they are fulfilled (WULZ, 1986).

Choosing between a series of alternatives seems most efficient once we expect that a large number of people can individually customize their houses. It seems even more consistent with the involvement of digital tools, which could combine different options instantly, creating immediate scenarios. The more options we have, the more justified the use of the computer will be.

EXPERIMENTATION

This work presents the first stage of a more extensive research that seeks to create computational algorithms that facilitate the participation of users in the definition of architecture. A gradual increase of the customizable characteristics as well as different degrees of participation will define the next steps of the research.

The PMCMV serves as an object of study since it presents clear architectural rules that are conducive to the development of experimentation. However, customization in the design phase can only be effective when it is already known who the future residents will be, which means that this work can only be applied to the PMCMV - ENTIDADES.

The PMCMV inadequacy of housing units and family compositions is the starting point of this work that seeks a preliminary solution for it's the adaptation. Nuclear families, expanded nuclear, single parents, expanded single parents, couples without children, cohabitation, etc., must be addressed by the architectural solution.

Thus, the current research stage is based on a minimum unit of the PMCMV (with a livingroom, kitchen, two bedrooms and a bathroom), intended to house a couple with two children, looking for a way to expand it to better serve different family compositions, adding rooms and increasing their dimensions.

This expansion should take into account the guidelines of the PMCMV that defines minimum dimensions for housing units, being 36m^2 for detached houses and 39m^2 for apartments.

Although the program establishes a minimum area for the whole house unit, designers are allowed to change it acording to the municipal legislation, once they respect the minimum dimensions for the predefined furniture and it quantities.

Therefore, the growth of the environments must consider the necessary furniture, to attends the number of dwellers. For example, rooms must have couches with seating numbers equal to the number of beds. With more residents, you should predict the corresponding number of beds, seats at the dining table, sofa seating, and proportional cabinet, bathroom and kitchen sizing.

From a real example of the PMCMV city block, lots of 22 meters long by 7.25 meters wide were defined, which defined the architectural proposal. The houses were organized around courtyards that would illuminate and ventilate the rooms, , avoiding the the isolated house in the middle of the lot solution with the windows facing the divisions walls.
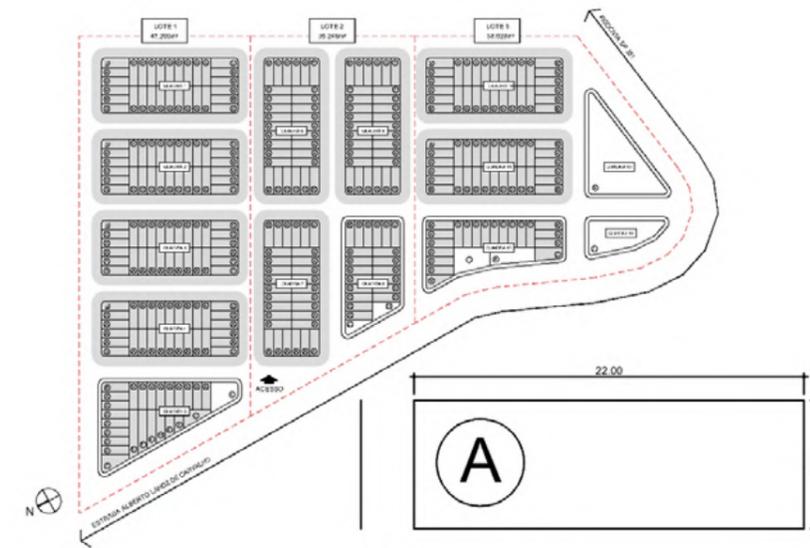
Image 1: City blocks and lot dimentions. Source: The Author

The longitudinal geometry of the lot suggests a growth along an axis, so that the rooms expansions can happen in two directions. In future we espect to establish diferents directions for its growth.

Although the proposal came from lots for single-family homes, the proposal can easily be transformed into overlapping units, creating multifamily buildings, which would justify their implantation in urban centers, appropriating the advantages that more dense urbanizations offer.
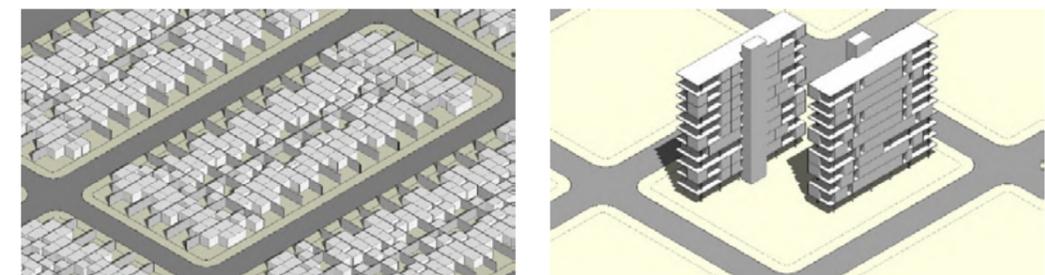
Image 2 : Horizontal and vertical arrangement of housing units. Source: The Author

It was then defined a preliminary architecture that would meet the requirements of the PMCV, adapting them to the lot and the growth criteria. However, the resulting minimum footage is 54 m2 of constructed area, higher than the minimum proposed by PMCMV.
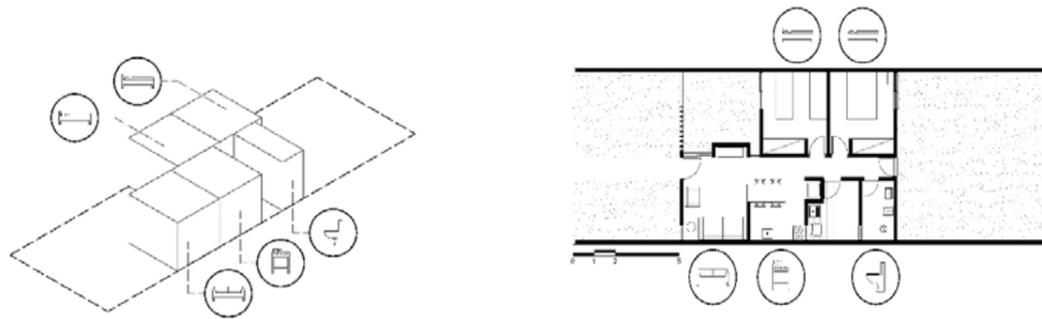

Image 3: basic housing unit. Source: The Author

Once the characteristics of the architecture and growth orientation were defined, a maximum number of possible dwellers was established, considering the lot size, the growth of the architecture along a single axis and the maximum number of four beds per room.

Given the size of the lots and the option for single-family houses, the maximum number of residents was limited to eight, considering that the living room should expand to the limit of a sofa for eight people and the kitchen for a table of up to eight places.

Although the minimum room accommodates up to two people, it might receive only one person, impacting the sizing of the other rooms. Thus, supposing a house of three bedrooms to eight people, one of which would house a single person, the others will have to house three and four people.

The dialogue with future residents is based on an algorithm developed in Python language, which will ask questions and, depending on the answers, will offer more options, defining the characteristics of the architecture.

A primeira pergunta pede o número total de pessoas que irão morar na casa. Qualquer valor, de um a quatro moradores, gera uma unidade básica de dois quartos e 54 m2.

The first question asks the total number of people who will live in the house, allowing as far as eight people. Any amount, from one to four residents, generates a basic unit of two bedrooms and 54 m2.

Image 4: Python Interface : First question. Source: The Author

The second question asks how many rooms are desired considering that this question arises only from five residents and offering a maximum of three rooms.
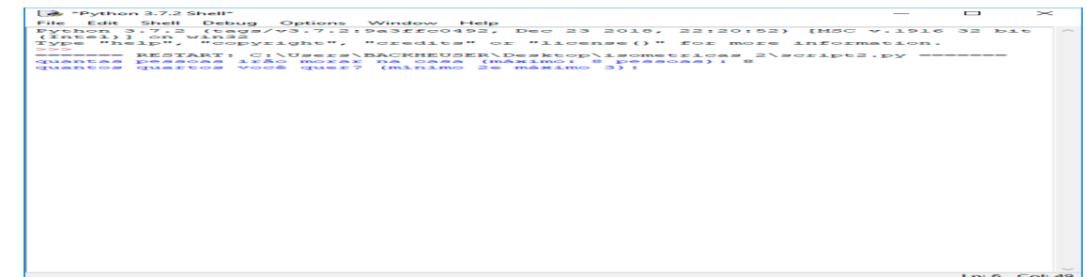
Image 5: Python Interface : Second question. Source: The Author

The third question asks to be informed how many people will be housed in the first bedroom. If it was chosen only two bedrooms, the number of people in the second one will automatically appear. If three rooms was chosen, it must be informed the number of people in the second room, automatically generating the number of people in the third room.
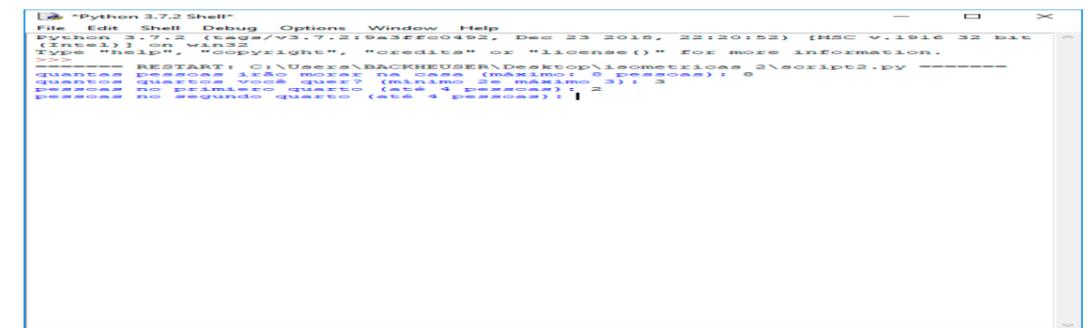
Image 6: Python Interface : Third question. Source: The Author
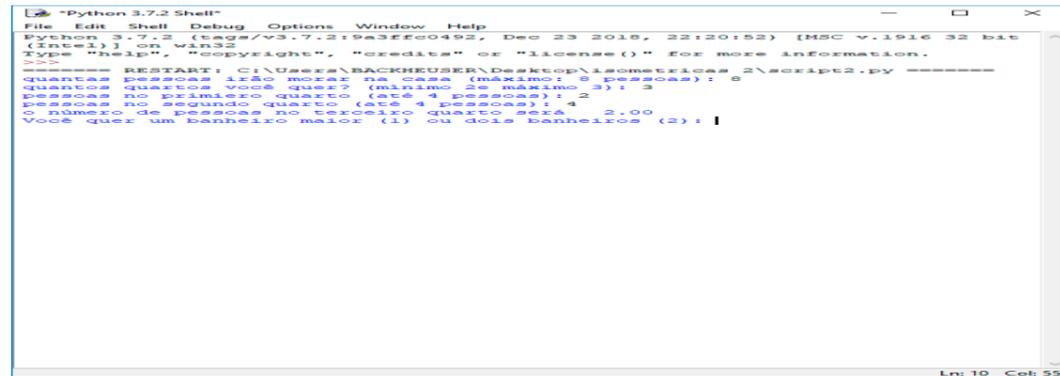
From five residents, the algorithm asks whether the user wats a larger single bathroom or two bathrooms.

Image 7: Python Interface : Fourth question. Source: The Author

Finally, the final area of the house is calculated automatically, as well as an estimated cost.

Image 8: Python Interface : Conclusion. Source: The Author

Then, using Grasshopper, a Visual Programming Language (VPL) application, a three-dimensional model of batch volumes, considering its maximum and minimum dimensions and expansion directions. While in the algorithm created in Python the variables are given by the number of people, in Grashopper, the variables are given in linear meters of expansion. From the questionnaire created in Python, Grasshopper transform de three-dimensional geometry. For example, up to two people in a bedroom we have three linear meters, for each additional person, we will have an additional linear meter, with a linear limit of five meters and four people in a bedroom.
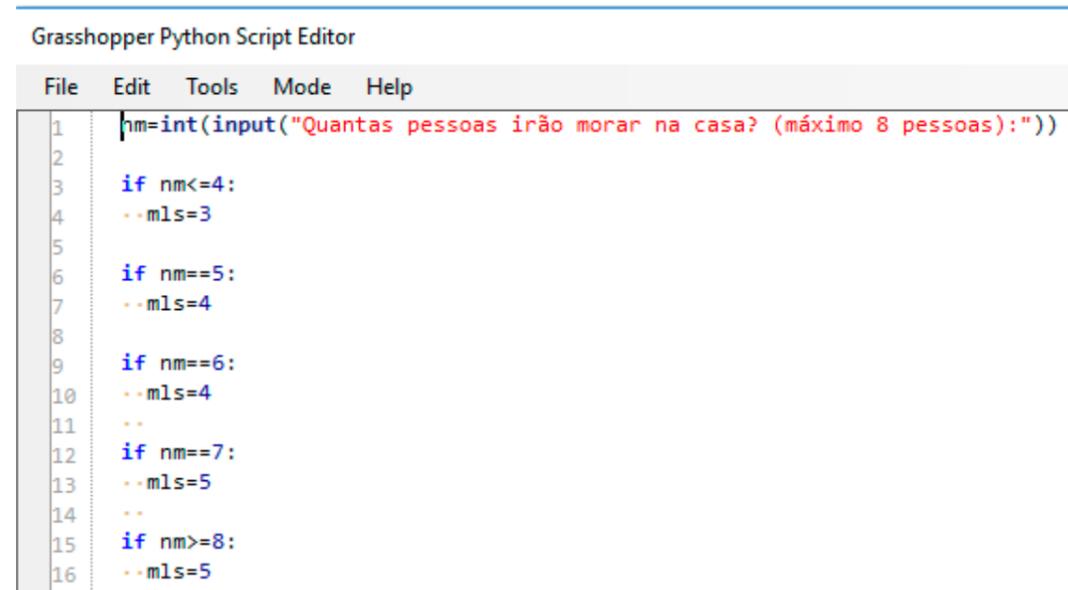
Image 9: Python Interface : Adaptation for volumetric generation. Source: The Author

Image 10: Scrip in the Grasshopper's Basic Housing Unit. Source: The Author
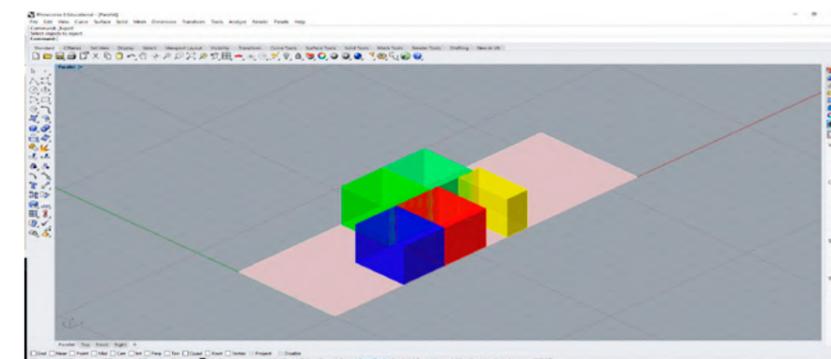
Image 11: three-dimensional model of the basic housing unit in Grasshopper. Source: The Author

We have the following number of options for each room:

| Rooms	Number of options	Notes
Living Room	3	It is considered that each additional place on the sofa houses up to two people. So each room growth is for up to two people. Up to four people (a), up to six people (b), up to eight people (c).
Kitchen	3	Each growth occurs for up to two people, since when we grow the table, two places are generated. Up to four people (a), up to six people (b), up to eight people (c).
Bathroom	3	Simple bathroom, enlarged bathroom (b), two bathrooms (c)
Bedroom 1	3	Two, three and four beds
Bedroom 2	3	Two, three and four beds
Bedroom 3	4	Nonexistent, Two, three and four beds

Table 1: Number of options for each room.

Thus, from five to eight people. It is possible to combine different number of people per room, with a minimum of two and a maximum of four. The size of the living room and kitchen is automatically modified for the number of residents.

With five residents we have twenty possible combinations. With six residents we have twenty-six possible combinations. With seven residents we have twenty-eight possible combinations. Already with eight residents we have twenty-two possible combinations. Totaling ninety-six possible combinations, in addition to the basic unit, which leads to ninety-seven options for the composition of the housing unit.

Here are three examples of possible combinations from the basic model.

Combination for five people: Considering five residents in a two bedroom unit and extended bathroom.
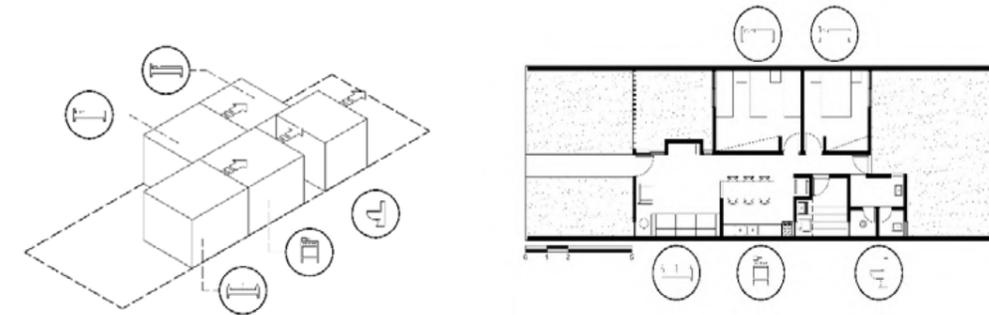

Image 12: Combination for five people. Source: The Author

Combination for six people: Considering six residents in a three bedroom unit and two bathrooms.
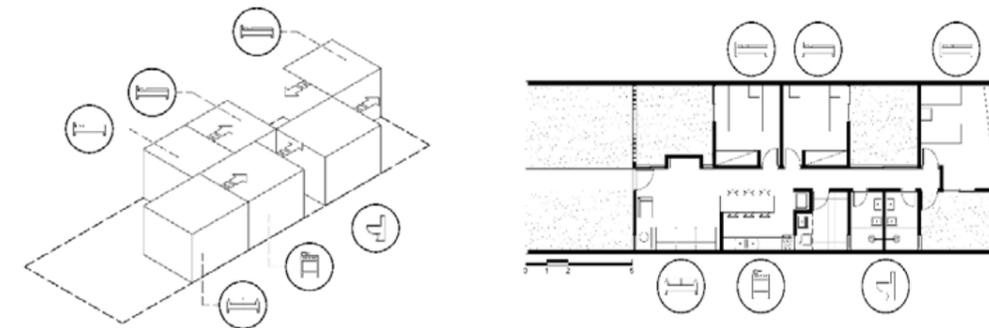

Image 13: Combination for six people. Source: The Author

Combination for eight people: Considering eight residents in a three bedroom unit and two bathrooms.
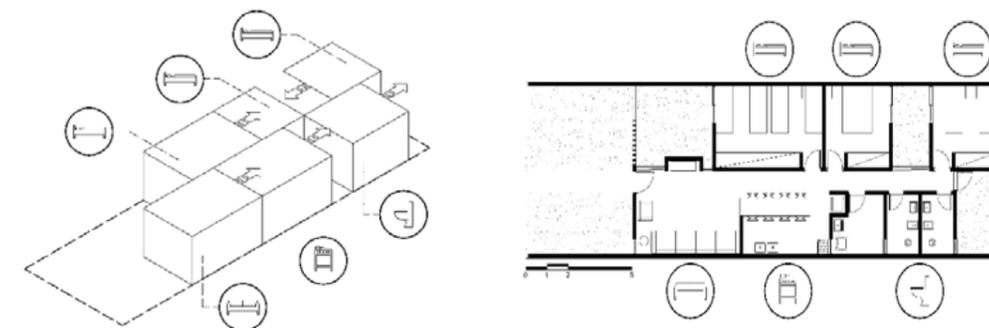

Image 14: Combination for eight people. Source: The Author

CONCLUSION

Experimentation has proved that we have achieved an immediate response in the adaptation of architecture to the specific demands with the use of digital tools, generating a great number of architectural variations in a few minutes. Thus, the potentiality of the proposal is proved, stimulating the research continuity.

If at the moment the number of inhabitants was the theme of the personalization, in future stages it is expected to consider more flexible uses of the spaces, diferentts relations among residents, other constructive solutions, as well as additional characteristics like material colors, etc. It is also expected to study different forms of expansion in different directions, generating more diverse results and increasing the options of combinations.

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COLLABORATION IN DIGITAL CONDITION

SESSION 3

In this session, we discussed participation and collaboration in digital era. Participation is understood as essential tool for the democratization of design processes, and has been assumed in many cities as citizen's right. Since World Wide Web transformed our everyday life, several innovative tools and organizational forms have contributed to increase the ways of 'doing together', enabling co-design, co-creation, co-production, co-governance and co-operation. The main question is: What are the opportunities and the challenges that the current digital condition brings to us so that processes in design, architecture and urbanism would be more inclusive, autonomous and democratized?

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Co-chair:
Alexandra Paio

Moderator:
Ana Carolina Farias

"(...) referentiality, communality, and algorithmicity have become the characteristic cultural forms of the digital condition because more and more people – in more and more segments of life and by means of increasingly complex technologies – are actively (...) participating in the negotiation of social meaning. (...) It is the ubiquity of these cultural forms that makes it possible to speak of the digital condition in the singular.
The goals pursued in these cultural forms, however, are as diverse, contradictory, and conflicted as society itself. It would therefore be equally false to assume uniformity or an absence of alternatives in the unfolding of social and political developments. On the contrary, the idea of a lack of alternatives is an ideological assertion that is itself part of a specific political agenda. Indeed, advanced democracies are faced with a profound choice, to continue their long slide towards post-democratic authoritarianism or reinvent democracy for the digital condition."

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TUR'19

Contemporary cities and the perspective of City Information Modeling

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ABSTRACT

Many changes in the cities' planning can be observed as a result of their growth and population increase as well. A society with unexpected new paths can be perceived having its way of comprehending and giving meaning to things frequently modified. Facing this new demand, it is seen a significant change in the architectural and urban plans related to the complex needs of a city. Many studies have been conducted to find a solution for those problems – it can be highlighted the use of technology in the urban project context as well as in the city planning and management. The objective of this paper is to present the *City Information Modeling* (CIM) applied to the contemporary cities as a technology to ease urban management. From the methodologic point of view the research has an exploratory scope based on a literature review aiming at gathering information about the subject and enabling the construction of a conceptual framework to identify the possible application of a CIM model. This is a wide and complex discussion mainly because there are many different concepts related to CIM – from the diverse number of listed authors there is no consensus on an ideal concept. It's been determined that this new paradigm is under constant development and it can doubtless be an extreme relevant tool for the city management and for the urban projects developers as well. The conceptual framework for using the CIM models provided for a more systemic view about the process that involves the city and the number of actors, and also the great challenge CIM has to face. CIM is an incipient technology and as a City Information Modeling there still has a range of changes to happen for the process appropriate operation mainly in the public management. To embrace all complexity of a determined city in one model will demand a long-term way to be traveled, mostly due to the major political, legal and operational barriers.

KEYWORDS: City Information Modeling, Technologies, Urban Management and Contemporary Cities.

1. **INTRODUCTION**

The current contemporary period is characterized by deep changes where the facing of new de-

mands brought about by the society still subsists alongside the use of new technologies (computers, digital medias, internet). Accordingly, architectural and urban production have been widely altered interlaced by more complex and different needs.

In the information or digital age, some equipment has become really important for the daily functions of space, such as the communication ones. Therefore, information turns to be customized as well as the relation with the urban space. The idea of having the activities in the urban live digitalized is associated to the customization of information and the production of a new kind of city that corresponds to this complex society.

The construction of a virtual space by means of the technological advances enables information change and allows the approach of new issues related to the Information and Communication Technologies (ICT), a new view of producing and consuming the spaces. The ICTs are tools that allow data, information and knowledge processing of a set of integrated resources in which it is possible to reunite, distribute and share information, besides involving all the human activities, making it seem so natural that the users themselves don't even perceive them (Bolaño, 2005).

The approach for the *City Information Modeling* (CIM) implementation can be one of the ways to achieve the CitySmart appropriate status. This platform pursues the global integration of all the urban systems involved in planning, management and construction of cities, in terms of the urban framework, besides providing for a more effective participation of the citizen.

2. THE CONTEMPORARY CITIES AND THEIR TECHNOLOGIES

The contemporary city comprises a wide number of problems, either by the gathering of historically worsened situations (such as mistaken management and planning) or by the new needs encountered on different contexts.

In any case, the reflection on the role of the city construction goes through problems that haven't been overcome yet such as issues on urban mobility, transportation, right to land and many other residential issues. In this latter case mainly related to housing, labor, employment and environment aspects. These all result in many challenges, and more than that, in conflicts related to the city spatial organization that is not properly extinguished (or that reappear in different shapes). Furthermore, for many years the cities have been incorporated to a planning view aimed at profit, based on the inequalities of the economic power. Also, technology has been raised as one of those means as the laws are not properly applied in order to have a better social equality. Technology has been widely used in tampering with the objects having the technology quality in doubt having had a deceived treatment.

Both the city and technology are extremely complex matters that have increasingly improved as they are in constant change. With the new shape of time framework for the daily life and the conceptualization of new cities, the idea of city has surpassed any physical, ethnic, linguistics, financing or

technological criteria. Now the city is not only about its geographic, physical, morphologic and quantitative parameters, but it is developed under cognitive capacities of the human species.

In this sense, there is neither an only one alternative capable of handling those problems, nor a distinct and exclusive view exceptionally encompassing them all. By contrast there are some approaches tracking the main problems to make other approaches possible to be embedded later. This is similar to hierarchy issues in which it is possible to have a kind of development by the ramification of details with special characteristics.

The economic and technological restructuring process of cities have been intensified by Globalization. It has had an impact also on rationalization needs and easiness related to process automation. Harvey (2014) tracks down the strategies that urban administration would be adopting for urban management, among them it can be noted issues like the notion of cities as productive centers, consumption centers, business and financial centers and redistribution centers.

The technological advances provide for new possibilities for the population involvement in the decision-making process and also in the creation of new indexes and parameters to be used in the conception and restructuring of the urban area.

Poster (2001) and Shapiro (1999) believe that technology is an interaction field due to the consequent social relation and the applied techniques that modify and reset the existing analogy between culture and technology. According to Castells (1999) the information technologies are not only the application of tools, but instead it is about a range of processes to be developed in society.

The development of new information technologies has turned the urban scale a bit easier. The inclusion of the intelligent cities concept in the urban planning has allowed many innovations to happen around it.

The need for new methods and techniques to manage the urban area is very clear. Cities have to find more intelligent ways to face the challenges. According to Turcu (2012) cities should react to the needs and present sustainable solutions for all the economic and social aspects. It is important to understand the demand so that the basic services are not affected.

2. THE INFORMATION MODELING AND THE CITY INFORMATION MODELING

New modeling patterns have been established due to the complexity of the contemporary cities together with the constant changes. These patterns are mainly related to communication and information that enable the arising of new technologies, new urban actors and, clearly, a new urban landscape. Altogether these factors make the changes urgent to happen mainly in the planning and urban management scopes.

According to Ascher (2010, p. 86) "Urban professionals will have to develop their own good practices

establishing models for new results, so as to consider ICTs potential in their actions"[1] (*translated quotation*). The new patterns to present results can be crucial in comprehending the problems. So, the creation of an urban database, as well as simulation and visualization models in three dimensions are to be considered in this process evolution and also in the improvement of techniques to be used in the projects.

Many concepts have been developed over time. Among them there is the Information Modeling where the comprehension of information is linked as a support for a process. Also, in tooling there may be some characteristics related to the shape, function or material. The establishment of new paradigms and interactive chains has allowed communication and information chains in different areas of a city, even if in the economic or social relations.

An information modeling is directly tied to an "object" and to the information this object is able to raise, store, convert to other interpretation and share. Usually they are all linked to a conceptual model and a database. The models are part of the information system that enable gathering, storing, processing, retrieval and spreading of information.

The information modeling is a process-based framework. According to Paulk et al. (1993) to perform a specific task a well-defined process should include some criteria such as availability, inputs, procedures and patters. Therefore, in order to produce something an operating system can be perceived as a sequence of performed actions or functions aiming at reaching a result. Processes promote great integration among people, tools and procedures. In this case they could be seen as what people do when using methods and tools to develop a new product.

Generally speaking, those technologies are part of an innovation process by which some cities have been through presenting a future perspective in which cities keep growing and being upgraded. Besides it provides for a search on more efficient urban forms, mainly considering the spatial configuration and the urban management as well.

It has been possible to develop the physical models into virtual ones due to the digital platform – that would turn them into more dynamic and complex processes. Nowadays, the term "modeling" has been widely used especially in relation to the three-dimensional digital modeling, where most of the times the model is based on graphic representation, differing from the initial ideal of information modeling.

The use of three-dimensional modeling is nothing new, just as the information modeling that took on its position in the scope of the AECO industry (Architecture, Engineering, Construction and Operation). BIM (Building Information Modeling) is an answer to process optimization in the construction life cycle as it modifies processes, reduces errors, increases productivity and coordinately integrates teams. All of these aimed at managing each project step, from its conception to the edification maintenance.

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1   Portuguese language quotation: "Os profissionais do urbanismo terão que desenvolver suas próprias práticas introduzindo novos modelos de resultados, bem como utilizar as potencialidades das TICs nas suas próprias atividades"

While BIM operates directly to the project of isolated edifications, CIM operates within the city. In the project process BIM influences the interdisciplinary approach, material specification, simulations and analyses, and knowledge management as well. Meanwhile CIM influences the use of tools that enables the visualization and understanding by the involved team turning the city management into an easier process and, consequently, improving the comprehension of real situations.

It is known that more studies related to the definite implementation of virtual cities modeling are still needed but meanwhile there is further discussion on the use of CIM and it has also been implemented in some cities. This is done by means of the integration of all the urban infrastructure involved in the planning, construction and management of cities – not only in infrastructure, but in diverse parameters not quantified yet. In order to develop better cities, it is relevant to consider the integration of information and communication technology together with the systems in the design phase of the processes.

According to Stavric et al. (2012, p.3) "The information modeling expression implies the development of an 3D urban model semantically enriched". Besides, it still directly relates the cities information modeling with many concepts, such as digital city, intelligent city, city information model, GIS (Geographic Information System) city, procedural city, among others.

It should be highlighted that urban information is always linked to a time dimension. Planning is about developing plans and ideas in order to anticipate some aspects related to the future. The cities aren't based upon only on spatial and time dimensions, but they also have economic, social and environmental attributes. So, a nD urban information model "[...] will provide a broader information support for many systems of urban planning application" (Hamilton et al. 2005, p.58).

As CIM involves all the complex aspects of a city there still no consensus on a proper definition because it hasn't been an easy task to conciliate all the variables, elements, actors, among others. In addition, it has been noted that some authors have focused more in aspects that don't reflect CIM in all its scopes.

CIM should be seen as highly efficient and multifunctional integration management system, which data are far more complete. Models are more accurate and efficient with the focus aimed at a multi-services – multi-fields collaboration. Moreover it should reach vertical and horizontal management of broad spectrum in the digital city and should also improves the general efficiency of the urban management.

For the purpose of this article CIM is considered as a development process of a digital model for a city with different dimensions and definite characteristics. It is a setting that integrates processes, policies, people and technologies, where softwares based on a collaborative process allows it to be an instrument to make city management easier.

3. **CITY INFORMATION MODELING FRAMEWORK**

CIM models structuring is very important in order to meet the information modeling process objectives, as well as to keep the aimed quality within this model. As in BIM, different models can be developed such as specific models for the particular uses and purposes for each demand in a city. To think about an only one standard model with an only one function for a city seems extremely unfeasible.

The objective of the CIM model has to be the first scope to the identified, one of the basic criteria due to the limited data processing capacity. The information should be appropriately turned into useful data, appropriate to the common good. The excess or lack of data can develop hard issues in the information modeling. According to Thompson et al. (2016) it is always important to verify data availability and accessibility, data consistency and accuracy, and data integration and manageability.

The proposal of a conceptual framework for the application of CIM models is based mainly on the need of comprehending CIM models and on how they can directly influence the urban management, its main aspects and possible ramification as well.

Conceptual frameworks have been usually used to understand complex issues, starting from an hypothetical situation on a specific matter. According to Mazione (2013, p. 186) the conceptual framework

> [...] allows for an holistic view, providing a structured approach to face specific issues and it also can be the base for the construction of straightforward conceptual models or framework[2] *(translated quotation).*

The proposal framework clearly does not intend to cover all the CIM model needs. It doesn't mean to be limited and it needs to be adapted as new studies about CIM come up, enabling some flexibility on the process.

First some issues should be highlighted, such as the modeling objectives that, according to Echenique (1975) should be divided into descriptive, predictive, explorative and planning models. The objectives are mainly related to their application – in this situation where the CIM model is applied it can be presented four distinct models, as it can be seen on Picture 01.
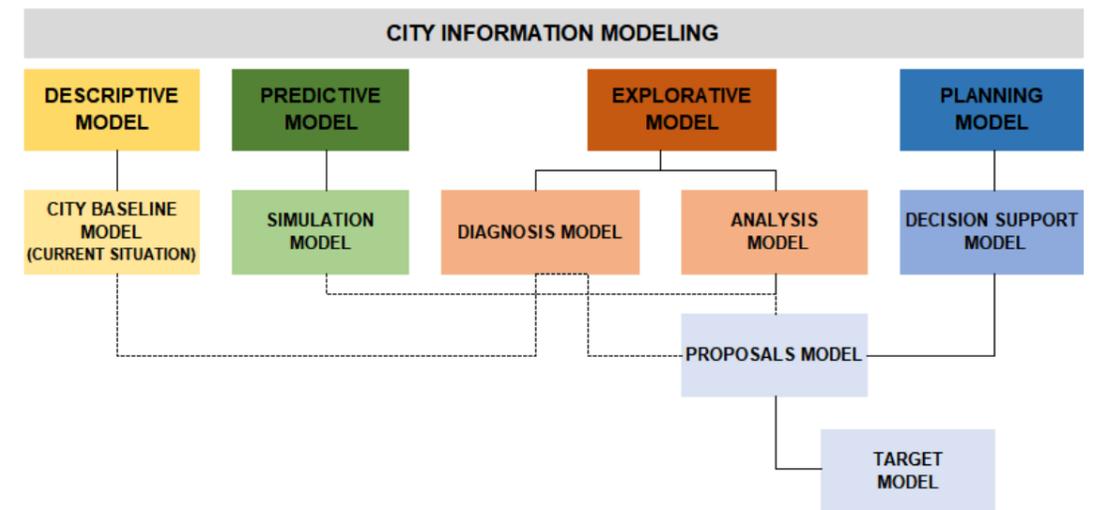
Picture 01: City Information Modeling Diagram. Source: The author.

Picture 01 shows that CIM models are divided into city baseline model (current situation) that present all information and data available about the physical framework of the cities – the descriptive model. The simulation model, that would enable tests in the cities starting from the baseline model – this is a kind of predictive model aiming at foreseeing future settings.

The main aim of the explorative model is to investigate and it was divided into two other models – the diagnosis model (analytic process) to identify the city data setting as well as its potentialities and problems and the analysis model to study each part of the setting in detail.

Finally, the planning model that is a model to support the decision-making process in order to provide appropriate predictions and estimates but that has the main function of planning, that is to develop a proposals model and from that generate a target model. Planning is an administrative tool, mainly in urban management, as it analyses the paths to be followed in order to get to the proposed goals. It is also important to highlight that the planning models, specifically, must not be tridimensional, but they make use of it to achieve their goal.

Nonetheless, it is not possible for the models mentioned above to cover all the existing demands in the urban management. For that, it is proposed a conceptual framework of the integrated model for city management, sharing all the possible models to be used on it, based on CIM models, as presented in Picture 02.

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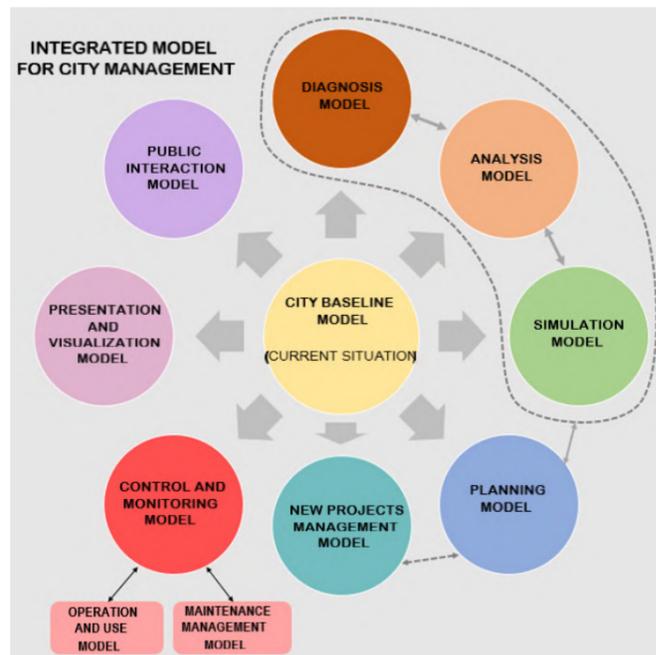
Picture 2: Conceptual framework of the Integrated model for city management. Source: The author

The CIM baseline model of the city is a central one because it would be the core for the development of all the others. The baseline model main aim is to give support to all the other application.

The other applications are divided according to their functions - diagnosis, analysis and simulation models to support the development of the planning model. The models are also divided into new projects management model as well as monitoring and control model – this last one still to be divided into: operation and use model and maintenance management model. These two ramifications are primordial importance for urban management, mainly because a good amount of the municipalities' resources are consumed on services related to the city monitoring and they are considered to be high added value services.

Among the applications there is also the presentation and visualization model that would be basically the visualization of the baseline model or of any other needed model. This model can be presented through a cloud platform in real time, turning the collaborative work easier and enabling the decision-making process. The view only-CIM model would be authorized for some actors involved in the urban management process but not part of the technical staff responsible for planning, administrating and managing the models.

At last, the public interaction model would be aimed at developing an interaction platform through the CIM models enabling society to have their part in the management process. In this case, they provide for a more democratic management with a mechanism for participation and social control,

besides it also can be an instrument for monitoring and evaluating the performed actions. The interaction model also allows to ask for and to map the public audiences performed by the municipality board, in face of the main involved projects.

The dynamic model idea is linked to the concepts of ubiquitous or omnipresent cities. These cities are considered "Cities of Tomorrow", with the omnipresent city being developed by computer chips or sensors inserted into urban elements (Lee et al., 2013).

Some authors have named the ubiquitous city idea as U-City. According to Ho Lee et al. (2008, p.2) "The U-City aim is to develop an environment where any citizen would be able to get any service in any place and at any moment using any ICT device".

Internet and ICT's speed would be the main needs for the perfect functioning of a U-City. The ubiquitous or omnipresent technologies would ease intelligent services as teleconferences, homebanking, intelligent transportation system, remote sensing and also monitoring and controlling of the urban infrastructure. It is clear that the dynamicity of the CIM baseline model by means of sensors, hardwares and softwares would make an instant change in the model possible.

4. FINAL CONSIDERATIONS

The contemporary city representation has to be seen from an urban architecture compound of a technological space-time system, moving forward with the material barriers and enabling new ways to access information and new project proposals, even if it happens in an immateriality field at first. The project's answers developed in a machine are comprised by computational interface mediated solutions. It is considered to be an immaterial scope as all kind of manipulation is performed by this interface.

The technology used to find a solution for a specific issue is not just an intervenient answer given by a group of professionals (programmer, urban planner, sociologist, etc) that reached the answer based on prescriptive and innumerable data. Nowadays, the technology available is the product of many years of research and development, by hundreds of dedicated professional working on improving and reviewing concepts and tasks to support a final decision. The answers provided by softwares cannot be considered unequivocal, but it is still susceptible of other interpretation by a competent staff able to judge and evaluate the solutions.

In this case, mainly because this is new technology, the first paradigms have to be overcome. Many times, the urbanism guided by the new technologies can be perceived as a kind of criticism to the old models, not just due to its contrast, but because it has the desire of reverting some situations that presented inappropriate or incoherent over the years. Besides that, as the future has presented itself a more instable and less accurate environment, the use of new technologies can enable more flexibility to answers or even present openness for them to have a better solution later.

CIM tends to face many questionings and a huge transition phase, like BIM. A new technology needs these issues to be consolidated so that it can be considered really effective in performing the proposed changes.

It is essential that the project team shares a common goal when dealing with 3D models. Also they should enable collaboration in all the life cycle related to the urban, planning, project, construction, operation and management framework. For the cities these characteristics are becoming even more complexes mainly due to the number of factors related to the urban management, the wide number of project solutions presented in the urban planning and their extended life cycle as well.

CIM should act as a supporting agent in the decision-making process of the urban management and should be linked to the population, not necessarily just to the designer. It should happen by the use of interactive models accessible to the population and for that it is indispensable to make CIM part of the management process as a whole, and not only as analysis tooling. From that, it can be noted how the pillars presented in the concept of intelligent cities management are needed when applied to the information modeling process. Consequently, new frameworks should be developed to meet this paradigm.

There is no ready answer for the cities, as there is not an only one answer for them. CIM is not an answer but an alternative - not only related to the urban project. This is a possibility of change in all the process and systematization of the city management and it can contribute direct or indirectly in its many different areas.

CIM should be in accordance with the urban plans and legislation, as it is not possible to think about an ideal model whether it isn't considered a legal one. So, the need of responsibility sharing should be highlighted. It is not possible for the public administration to elaborate, develop, apply and keep everything under their control. It is demanding that the institutions work as partners, even the private capital that is doubtless directly interested in the city development.

Different from BIM, it is not possible for CIM to clear and briefly specify the areas involved in a city as this is a hard process, involving also the relations among each of its elements – a much more complex process than an isolated edification.

The CIM is under constant development and can be considered a relevant tool for the cities' management and for the developers of urban project as well. The conceptual framework for the use of CIM models has enabled to perceive a systemic view of the process, a number of involved actors and a great challenge they have ahead. The City Information Modeling will be composed of many information models, as many as it is needed to handle the upcoming demands.

The Intelligent Cities can significantly benefit from CIM contributions and moreover it is extremely important for both of them to be somehow interconnected as the new structures of the Intelligent Cities can have a direct influence in this process development. In addition, this new way of structuring cities (in the face of a knowledge model) can permit the real understanding of the infinite complexities of a city.

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Are smart cities' activities driven by local government promoting citizen's participation? A comparative study between Bristol and Porto

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ABSTRACT

Sustained by new information communication technology tools and by the development of innovative digital solutions, smart cities are investing their resources in "citizen-centric" policies and enhancing new dynamics of citizen's participation. This approach allows to tackle urban issues with innovative methods and create policies tailored to citizens and cities' needs, and at the same time, empower the local community to participate in the shaping of their future and in the design of local services and projects. However, what cities' governments proclaim in their smart city activities and in citizen-centric projects is not necessarily consistent with the reality. This research analysed citizens' participation in smart city projects triggered and developed by the local government in Porto (PT) and Bristol (UK), in order to discern if these activities are enhancing the engagement of the local community and at which level. A previously described scaffold of citizens participation in smart city projects was used to analyse and determine the level of citizens' participation in projects held in Porto and Bristol. Results suggest projects in both cities are not providing leadership roles to citizens in local smart city activities, which are still framed by models of non-participation, consumerism and tokenism. Evidence also shows that projects and activities with high-tech profiles represent less engagement with citizens and have the propensity to difficult the people involvement and to generate co-creation opportunities, given the complexity of their missions. Moreover, both cities have invested in innovation ecosystems to attract private players and start-up companies, transforming the cities into living labs and test-beds for new market solutions, reducing the citizen's influence throughout the process, giving the local communities a consumer role in a market of choices.

KEYWORDS: Smart Cities, Citizens participation, Citizen-centric policies.

INTRODUCTION

Underpinned by new ubiquitous ICT solutions, smart cities policies are being adopted globally by local governments as an innovative approach to address contemporary urban issues (Carvalho, 2014). Additionally, local Councils and other governmental institutions are also investing in state-of-the-art ecosystems in order to make better informed decisions and to redesign public services for their citizens (Rabari & Storper, 2014). It is argued by a considerable list of authors that these new technological tools enhance citizen-centric solutions and promote citizens' participation in local policies, in particular, smart city activities, where inhabitants have an active role in project's formulation and services redesign (Mellouli et al., 2014; Cowley et al., 2018). However, it is relevant to analyse this discourse more closely and interpret the level of citizens' engagement in depth, especially due to the existence of differing perspectives arguing that smart cities activities, promoted by local governments, are essentially characterised for being top-down oriented, driven by technological solutions developed by multinational companies and imposed to citizens in a consumerist market-driven scenario (Kitchin, 2014; Vanolo, 2016; Datta, 2015; Cardullo & Kitchin, 2017).

To offer another contribution to the discussion, this work investigates the level of citizen's participation in smart cities activities driven by the local government, in order to understand the real impact that local communities have in reframing local policies and citizen-orientated services. To answer this question, two case studies will be discussed, the City of Bristol in England and the City of Porto in Portugal, which will allow to understand the dimension of the citizens' engagement in each city but also analyse this subject through a comparative lens.

LITERATURE REVIEW

The smart cities concept has been growing in popularity mainly, triggered by the importance that urban policy and cities' planning have in today's world, especially due to the continuous development of megacities that will shape the future of the civilization (Albino et al., 2015). According to United Nations studies and reports, 50 percent of all people in the globe – 3.3 billion – were already living in urban areas by 2008. The expectation is that these figures will increase to 70 percent in the year of 2050, confined to approximately 4 percent of the terrestrial surface (Caragliu et al., 2011; Albino et al., 2015; Shelton et al., 2015; Hayat, 2016). In order to prepare urban areas for this worrying future, local authorities and other governance players started to develop innovative policies and projects to address pressing urban problems (Carvalho, 2014; Shelton et al., 2015). As argued by Cowley et al. (2018), new technology is capitalised into the existent systems of governance and management of the city, improving the current ecosystem with new solutions, such as the rearrangement of the traffic network and rationalisation of energy distribution, and with the particularity of positioning public as an integral part of the city's routine and its functionality, reshaping citizens' role and the classic concept of citizenship into a new paradigm. The same perception is also shared by De Lange and De Waal (2013), presenting a scenario where citizens become "data commons", or as Perng and Kitchin (2018) observed, people's capacity to generate "civic hacking" and to act like data points. In fact, smart city projects around the world reshape their services and polices using data generating sensors fed by citizens themselves, to map cities' daily interactions, and in this way, generate a scenario of smart cities populated by smart communities (Aguilera et al., 2017; Cardullo and Kitchin, 2017; Cowley et al., 2018).

Despite the common idea that smart cities have centred their initiatives in population, some differing arguments highlight the neo-liberal profile and the technology businesses orientation of smart cities activities. This argument, defended by some authors, claims that smart cities initiatives are fundamentally top-down oriented, inserted in a consumption driven society, based uniquely in citizens' choices, reinforcing an idea of a smart city tailored by entrepreneurial and market-led solutions, created by companies and endorsed by local governments in the form of civic paternalism (Kitchin, 2014; Vanolo, 2016; Datta, 2015; Cardullo and Kitchin, 2017; Cowley et al., 2018). As such, the creation of citizen-centric policies in smart cities seems to be mostly driven by a corporate and technological urbanism, owned by local governments and big IT companies, in a neo-liberal market environment (Hollands, 2008; Kitchin, 2015; Cardullo & Kitchin, 2017).

METHODOLOGY

The majority of the existing literature fails to examine in depth the real level of cooperation and co-production of citizens in local smart cities' policies and in the policy making processes. This scrutiny emerges as a crucial matter of discussion, given that most of the smart cities in the world claim to be citizen-centric and people-minded. To answer this question, qualitative method was chosen as the best approach, by analysing official documents and conducting interviews, and adopting the contemporary tool "scaffold of smart citizen participation", presented by Cardullo and Kitchin (2017) as an evolution of Sherry Arnstein's "ladder of citizen participation" (1969).

For this particular research, only official and institutional documents, such as local authorities' reports and institutional websites, were considered in order to reduce the risk of inaccurate and incorrect information. To complement the information extracted from official documents, semi-structured interviews with open questions were conducted with senior officers with responsibility to implement smart city policies in Bristol and Porto councils, to eliminate any discrepancies between official information and the operationalisation of the projects.

Both interviews were structured in the same way: the first section was dedicated to smart cities' projects developed locally, as a way to fulfil and clarify any insufficient information previously obtained from the document analysis, the second section consisted of broader questions about smart cities' policies and people's engagement.

Once this information was collected and compiled, this study adopted the "scaffold of smart citizen participation" previous developed by Cardullo and Kitchin (2017) to measure the levels of people engagement in smart city activities in Dublin. Adapted from Sherry Arnstein's work "Ladder of citizens participation" (1969), the "scaffold of smart citizen participation" critically evaluate the citizen-focused nature of smart city projects. Arnstein´s original eight rungs were redesign in a wider conceptual scaffold, in order to accommodate type, role, function, political discourse/framing, and modality of citizen participation in the neoliberal model embraced by nowadays cities (Cardullo & Kitchin, 2017).
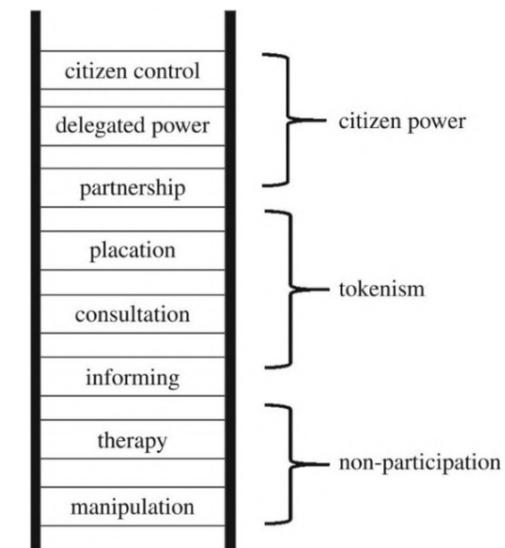
Figure 1 - Arnstein's ladder of participation, Arnstein (1969). Source: http://rsta.royalsocietypublishing.org

The different levels and participation forms include:

• "Non-participation": citizens are steered towards specific behaviour or performance and engagement is almost non-existent, despite citizens' possible relevance in data production;

• "Consumerism": in this level services and products are design with limited involvement of citizens, with the last ones having only the option to choose one service above others in a market-led environment, designed to determined what is best for citizens without their input and participation;

• "Tokenism": presents various forms of public engagement, starting from the lowest one, whereby citizens are offered information about local data and the possibility to use that same data in citizen-created solutions, to the highest levels, whereby institutional driven projects are open to citizens' suggestions and ideas for alternatives.

• "Citizen-power": is the highest level of citizen's participation in policy making and it is divided by "partnership", where planning is shared between official representatives and ciestizens, "delegated power", which happens when citizens have the ultimate decision and authority in shared projects, and "citizen control", when the policy is completely managed by citizens, from initiation to completion.

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Form and Level of Participation		Role	Citizen Involvement	Political discourse/ framing	Modality	Dublin Examples
Citizen Power	Citizen Control	Leader/ Member	Ideas, Vision, Leadership, Ownership, Create	Rights, Social/Political Citizenship, Deliberative Democracy, Commons	Inclusive, Bottom-up, Collective, Autonomy, Experimental	Code for Ireland, Tog
	Delegated Power	Decision-maker, Maker				Civic Hacking, Hackathons, Living Labs, Dublin Beta
	Partnership	Co-creator	Negotiate, Produce	Participation, Co-creation		Fix-Your-Street, Smart Dublin Advisory Network
Tokenism	Placation	Proposer	Suggest		Top-down, Civic Paternalism, Stewardship, Bound-to-succeed	
	Consultation	Participant, Tester	Feedback	Civic Engagement		CIVIQ, Smart Stadium
	Information	Recipient				Dublinked, Dublin Dashboard, RTPI
Consumerism	Choice	Resident	Browse, Consume, Act			Smart building/ Smart district
		Consumer		Capitalism, Market, Neoliberalism		Smart meters
		Product				Personal data generated by tech
Non-Participation	Therapy	Patient, Learner, User, Data-point	Steered, Nudged, Controlled	Stewardship, Technocracy, Paternalism		Smart Dublin, Dublin Bikes
	Manipulation					Traffic control

Figure 2 – Scaffold of smart citizen participation, Cardullo and Kitchin (2017). Source: www.research-gate.net

RESULTS AND DISCUSSION

PORTO

In Porto, after an analysis of the official documentation and subsequent validation from the senior smart city representative the "scaffold of smart citizen participation" was populated following the methods of analysis presented by Cardullo and Kitchin (2017).

Form and Level of Participation		Role	Citizen Involvement	Political discourse/ framing	Modality	Porto Projects
Citizen Power	Citizen Control	Leader, Member	Ideas, Vision, Leadership, Ownership, Create	Rights, Social/ Political Citizenship, Commons	Inclusive, Bottom-up, Collective, Autonomy, Experimental	x
	Delegated Power	Decision Maker				x
	Partnership	Co-creator	Negotiate, Produce	Participation, Co-creation		Hackacity
Tokenism	Placation	Proposer	Suggest		Top-Down, Civic, Paternalism, Stewardship, Bound-to-succeed	Desafios Porto
	Consultation	Participant, Tester, Player	Feedback	Civil Engagement		x
	Information	Recipient	Browse, Consume, Act			Data Sensors
Consumerism	Choice	Resident, Consumer		Capitalism, Market		Scale up
Non-Participation	Therapy	Patient, Learner, User, Product, Data-point	Steered, Nudged, Controlled	Stewardship, Technocracy, Paternalism		Porto Innovation Hub
	Manipulation					Wi-Fi Network; STCP Wi-Fi; Centro de Gestão Integrada

Table 1 - Scaffold of smart citizen participation in Smart City projects driven by Porto Council, based on Cardullo and Kitchin (2017).

In non-participation, citizens are nudged or steered to adopt specific actions or decisions in a pre-determined environment, therefore, their input is almost non-existent, sometimes used as living data sensors in a technocratic environment (Cardullo & Kitchin, 2017). In Porto, projects such as Wi-fi Network, STCP Wi-fi Network and "Centro de Gestão Integrada" (CGI) are examples of manipulation type activities (table 1), since each of these projects bypasses any integration with local citizens, functioning as data providers to generate information.

Within the non-participation level, other forms of engagement can occur, particularly when citizens are exposed to educational and promotional activities about smart cities projects and policies advocated by local institutions and stakeholders, using therapy and educational activities to encourage smart city ideas (Cardullo & Kitchin, 2017; Kitchin et al., 2017). In Porto, the smart city activity with educational and informative characteristics identified was Porto Innovation Hub Project. During 24 public debates, local community debated innovation and city's future, covering different themes and promoting the best practices on innovation and solutions to local problems and opportunities (Sal-

cedo, 2017).

Regarding consumerism level in Porto, Scale Up project offers a city's ecosystem for innovation, centred in start-ups, technology businesses and R&D, creating an optimal environment to catalyse and enhance new companies. In this scenario, private institutions are encouraged to address urban challenges and manage solutions within the sphere of the public good, resulting in a limited interaction with the community, since it will only affect consumers and inhabitants with the means to access to these private solutions. From a consumer role perspective inserted in a capitalist environment, the participation of citizens in this project is essentially narrowed to the choice of using these private services and products.

Tokenism as form of participation in Porto is visible at its lower level (Information), with the Data Sensors project, and at the highest level (Placation), in "Desafios Porto" project (table 1). In relation to the Data Sensors network, citizens act as recipients of the information collected by this technology, installed in various strategic locations of the city in lamp posts or other urban equipment, close to fibre optical network access points. The data generated by the sensors is publicly available in an open platform and documented online allowing citizens, companies and services to have access to them and use them as input for different purposes in the mobility, transport or well-being areas. In a higher level of tokenism, "Desafios Porto" offers an opportunity to suggest and propose ideas and solutions for the city. Opposite to the Data Sensors project, where the information is exclusively unidirectional, without a feedback channel, "Desafios Porto" represents placation as form of civic engagement, involving a more dynamic co-creation process between groups of citizens and local government. In fact, citizens' participation in "Desafios Porto" is an influential factor for the project's development, however, since the materialisation of the ideas is handed to local start-ups and private business, the level of citizen's involvement is insufficient to achieve a co-creation role.

In Porto, only one smart city project was identified within the citizen-power level, the Hackacity project (table 1), however, its citizens' engagement is in the lowest level form of participation - partnership. Hackacity challenges citizens with skills in programming and data science to present citizen-centric solutions by using city's open data and smart city solutions. Participants are welcome to produce any solution they want in an open platform, nevertheless, the activities are mostly dictated and driven by the organisers, leaving the citizen's involvement in a negotiation and production level, rather than giving them the tools for a complete decision-making and leading role (Associação Porto Digital, 2017).

BRISTOL

The analysis of Bristol's smart cities projects, driven by the local government is presented in table 2.

Form and Level of Participation		Role	Citizen Involvement	Political discourse/framing	Modality	Bristol Projects
Citizen Power	Citizen Control	Leader, Member	Ideas, Vision, Leadership, Ownership, Create	Rights, Social/Political Citizenship, Commons	Inclusive, Bottom-up, Collective, Autonomy, Experimental	x
	Delegated Power	Decision Maker				x
	Partnership	Co-creator	Negotiate, Produce	Participation, Co-creation		Dump Busters
Tokenism	Placation	Proposer	Suggest		Top-Down, Civic, Paternalism, Stewardship, Bound-to-succeed	You Decide
	Consultation	Participant, Tester, Player	Feedback	Civil Engagement		Replicate; Venturer
	Information	Recipient	Browse, Consume, Act			Bristol Open Data
Consumerism	Choice	Resident, Consumer		Capitalism, Market		B-net
Non-Participation	Therapy	Patient, Learner, User, Product, Data-point	Steered, Nudged, Controlled	Stewardship, Technocracy, Paternalism		Festival of the Future of the City
	Manipulation					Bristol is Open; Bristol City Operations Centre

Table 2 - Scaffold of smart citizen participation in Smart City projects driven by Bristol Council, based on Cardullo and Kitchin (2017).

The non-participation level of citizens' engagement in Bristol is represented in both forms: manipulation and therapy (table 2). In manipulation, Bristol is Open and Bristol City Operations Centre nudge the population using algorithmically based decisions and services. Bristol is Open is a physical network of fibre and wireless connectivity and the activities of the project are heavily technological, focused in generation of data from the network users, through mobile phones, tablets or other devices. On the other hand, Bristol City Operations Centre has the purpose to act as a response centre in the event of a major emergency and to manage the city's traffic network, nudging drivers and transport users, making adjustments to signals and re-organizing the traffic flow through the analysis of the data received.

In therapy level (table 2), we can find the Festival of the Future City as an activity of education and social learning about smart cities and innovation policies, exploring in innovative ways cities' key issues (Bristol Cultural Development Partnership, 2017).

The consumerism level, supported by a capitalist and market driven scenario, is represented in Bristol by the B-net project (table 2). The fibre infrastructure supports Council's ICT equipment, however, according to the local representative, the future goal of the Council is to expand the network service to private consumers and compete in the market with other private operators. The process of citizen engagement in this project is limited to the customer's role and to the individual choice of selecting this internet network service instead of other players in the market.

The smart city activities in Bristol with tokenism as form of participation are Bristol Open Data, Replicate project, Venturer project and You Decide project (table 2). At the lowest level, where citizens act only as recipients of information, we can find Bristol Open Data, a database with a vast catalogue of information, collected from different sources, and publicly available for consultation.

In a higher level of tokenism, Replicate project offers consultation to citizens, giving the opportunity to the local community to participate and give feedback in the activities. Bristol is deploying distinct pilots in Ashley, Easton and Lawrence Hill areas, covering issues like energy, mobility, health and well-being. In Replicate, the role of the local community is insufficient to reach a co-creation level in the various domains of the project, as the participants are not responsible to define strategies or develop solutions, their engagement is limited to give feedback on the activities deployed by the Council. Just like in Replicate project, citizens are welcome to participate in the tests of the Venturer project, a partnership between private companies, local universities, central government and the Council, dedicated to assessing road users' responses to the introduction of connected and autonomous vehicle (CAV) technology. The engagement with the local community takes place in a realistic simulation environment, where participants are welcome to take part in trials as cyclists, drivers and pedestrians, based in their self-reported primary mode of travel during their routine journeys, and to rate their trust in the CAV's during their participation (Mitchell, 2018).

Finally, the placation level is represented in Bristol by the project You Decide (table 2). Developed in partnership with Knowle West Media Centre, a local charity dedicated to innovation and civic participation, You Decide project is a free digital tool that allows inhabitants to share thoughts about local decisions, set up polls and debates, submit proposals and give feedback to the local government and other organisations. After an experimental period the programme has been on hold, therefore its discontinuity inhibits a full disclosure of the real extension of citizens' participation, since it is not possible to understand if this project allows citizens to co-produce their own ideas. For this reason, the project is classified as placation and citizens' involvement located in the suggestion level.

At the citizen power level, the project Damp Busters was found as an example of partnership and co-production. The project, run by Knowle West Media Centre and Bristol City Council, consists in the collection of data on environmental conditions inside houses by using damp-sensing frogs. Each resident voluntarily received a frog with a temperature and humidity sensor, which collects data of the environmental conditions of the house and stores it in an open database. The delivery process of the project involved great levels of participation from the local community, contributing with ideas to

the design and operationalisation of the sensor, in an active civic participation process of co-creation and negotiation between peers (Balestrini et al., 2017).

CROSS-CASE COMPARISON

Using Cardullo and Kitchin's (2017) scaffold of citizen participation in smart cities projects, the modality present in the majority of the smart city projects in Bristol and Porto is top-down, defined by low levels of citizens' engagement and a paternalist role of the local authorities. Activities such as Bristol is Open, Bristol City Operations Centre and Porto's Wi-Fi or the CGI are using citizens as data generators, and due to their technological nature, these projects demonstrate that high-tech activities represent less engagement with inhabitants and have the propensity to difficult to get people involved and generate co-creation opportunities, given the complexity of their missions.

Furthermore, both cities have invested in innovation ecosystems to attract private players and start-up companies, transforming the cities into living labs and test-beds for new market solutions. This reduce the citizen's influence throughout the process, giving them a role of consumer in a market of choices, and leaving them, at the best, uniquely with the involvement level of test-participants. The propensity to develop activities with reduced level of citizens' participation in Bristol and Porto follow a tendency previously seen in other European cities with relevant activities in smart city policies. Mora et al. (2018) have demonstrated that in smart cities benchmarks, a substantial part of the local projects does not have any involvement of their inhabitants, whilst Cowley et al. (2018) claim that UK smart cities have not achieved their perfect state of "public city", especially in areas where citizens can have bigger acting roles, such as in the political and civic spheres.

In Bristol, Knowle West Media Centre plays an important role in smart city activities within the city, operating as a platform for intermediation with local communities, perceived in the You Decide project and in the Dump Busters project. On the other hand, in Porto we observe the inexistence of a non-governmental organization of the same nature.

An additional aspect to highlight, is the absence of an engagement strategy intersecting the various projects in smart city policies of both cities. In fact, projects are conceived and operationalised isolated, therefore, community's participation is defined in accordance with the objectives of each project. In Porto, there seems to be an effort to build up some cross-project strategy in the aftermath of Porto Innovation Hub, which includes a transversal policy for citizens' involvement in the smart city agenda.

Finally, the financial nature of the projects is not built around the promotion of citizen's engagement. The reality is that funded-nature projects, usually UE resources, have limited schedule to allocate funds and achieve outcomes, leaving little room to citizen's engagement. The process to engage local community takes time and requires resources, which is something that Councils cannot afford, due to their limited time frames to develop their projects, reach outcomes and report them to the fund-

ing institutions.

The analysis of the interviews also showed that both Councils consider that co-production is essential to articulate the real needs of the community and to tackle the smart cities agenda from a public interest perspective, rather than relying only in private and business developments of innovative solutions. Nevertheless, reality seems to be conflicting with this idealistic scenario, and the fact is, that the scaffold tool demonstrates that most of the smart city projects developed either by Porto and Bristol Councils are not increasing the proportion of smart city projects in which citizens are leading. In fact, this goes in line with Cardullo and Kitchin (2017) findings, that despite some levels of open participation, smart city projects' participation in Dublin, appear to be largely in the tokenism sphere.

Considering these results, it remains to be seen if smart city projects underpinned by local authorities will be able to originate citizen-controlled projects. Restrictions as funding, structures, scale or technical knowledge, tend to decrease the citizen power in smart city activities. To overcome this difficulty, the involvement of citizens can be easily articulated with non-governmental organisations, who may be in a better position to adopt a pivotal role of engaging the community in a proximity level that is difficult to replicate by Councils.

CONCLUSION

This study arose with the interest in understanding the level of citizen's engagement in smart city policies, promoted and developed by local government entities in Bristol and Porto. Populated by conflicting arguments, citizens' participation has been part of the debate about smart cities' activities and their capacity to generate citizen-centred policies and leverage the participation of communities in the policy making. By adopting the "scaffold of smart citizen participation", the analysis shows that the majority of the smart cities' projects developed by Bristol and Porto Councils are characterised by a top-down/tokenism modality of citizen's participation, with projects and activities concentrated at the lowest levels of people's engagement. Even the activities with highest levels of citizen's engagement, with demonstrable forms of partnership, were identified as being preconditioned by rules and prerequisites prior to its execution. The exception is the Dump Busters project in Bristol, which opened the participation to different groups in the community and allowed coproduction without fundamental predetermined rules. In parallel, the critique that smart cities' activities are heavily determined by technological knowledge, inhibiting the participation of its inhabitants, was also identified in both case studies. Moreover, due to a clear investment from the local Councils to turn Bristol and Porto in testbed cities, living labs for companies to test innovative solutions in the real world, citizens are not involved in the execution and in the implementation process of these projects, which are managed by local governments and private companies. Here, the citizen's role is limited to consumerism and to the decision of whether to consume a specific solution in the market or not, with very limited forms of participation.

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Ergonomics and usability: How mobile applications have changed the social, the consumption and the way of working in the information society

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ABSTRACT

Since the first industrial revolution, technologies have emerged to accompany the commercial model of production, that is, as consumer relations have emerged more intensely, production models have been modified to meet this social demand.

In a way, people were already doing what is now called User Experience, but the use of new technologies in users' everyday life has potentiated the development of the theme, with the word "user" being the focus to be studied.

He, the user, is who can or can not direct the future of digital products. Thus, it is possible to affirm that there is a dual relationship in which digital products, mobile applications infer in a change of social behavior, whereas those who determine their existence and development are the public that uses it.

As examples of the impact of new technologies on user behavior, it is possible to cite social networks such as Facebook, which promoted radical changes in social and work behavior, as the number of people using this communication tool as a means of seek and publicize their work, or even enlist consumers through marketing actions, is infinitely large and has been growing wildly.

As Walter Cybis et al explains,

> since functionality and usability are assured, the system can be designed to meet the psychological and sociological needs of the user, making interaction a pleasurable experience (...) incorporating customization principles that will allow each individual to adapt the system to the your personal preferences. (CYBIS et al, 2010).

In this way it is possible to perceive the importance of the ergonomic study of usability in the current mobile applications in the areas of communication, economics and labor relations.

In order to understand what behavioral relations related to ergonomics and usability can be estab-

lished to the user of mobile applications, during the development of this research were collected the concepts applied to the world of design and cyberculture as a basis to answer the main question of this study: how have mobile applications changed social behavior, consumption, and how to work in the information society?

Understanding human behavior and its relations with its environment not only allows us to better understand the world and its relations of complexity based on technologies, but also opens the way to the translation and understanding of the lifeline of a mobile application in the present day and how the human relationship is affected.

KEYWORDS: Usability, Ergonomics, Social Behavior.

INTRODUCTION

This study aims at analyzing the user behavior of the mobile application, applying the User Experience aspects presented by Donald Norman (2004), which studies the user interaction, taking into consideration how the digital product is understood, learned and used, observing its main features and how these are affected after the use of new applications.

With this, it sought to outline the visual elements that promote and arouse the users emotionally and that, in the future, will be considered as behaviors and patterns modified by graphical elements used in everyday applications, according to the ideas presented by Norman (2004).

At the end, a survey of the main applications are used in the field of communication, finance, labor market and transportation. In addition to the profile of behaviors we set in age, profile of use of mobile applications and main behaviors presented within the research period. A reflection will also be built regarding the lifecycle of an application in the present day and which visual aspects characterize them and bring about changes of behavior and social patterns.

Considering these aspects to highlight the hypotheses raised and clarify the notes previously presented, a method based on research steps was assigned in order to achieve the aforementioned objective. These aspects of the process were based on the empirical approach in the field - Paul Lazarsfeld's theory of limited effects (1940), which thinks of 3 processes to determine the relevance of a content to the public, being content analysis, characteristics of the listeners (public) and satisfaction studies, which aims to study the success and failure of the persuasion embedded in the message, Lazarsfeld considers pre-selective effects and later effects in its process and considers that the medium selects the public and then exerts influence over this audience, WOLF (2006). In other words in imagining that the message mentioned in the theory is the communication effected through mobile device and its applications and the public being the other end of the communication made

the approach valid as effective for the study in question.

Given that one of the objectives was to identify the most used applications, their aroused behavior patterns and the user profiling to which these behaviors are linked, the first step of the work was done through online research, through a questionnaire, check figure 1.

Fig.:1 Mobile Applications - Social Behavior and Usability. Search Authorship 2019

This format made possible the sincerity of the user since he is free to respond in his time and in a more spontaneous way. Among the questions asked were:

- Describe a very good experience with some application.

- Of the applications you use, which one (s) you like the interface. (Consider, colors, illustrations, shape of buttons and texts).

- Describe a situation where some application made you change your vision about something.

Among the results obtained from the 43 answers obtained, one can observe and highlight some insights, being:

- Older users tend not to download Apps often and keep even the ones they do not use.

- Users dislike ads and prefer simpler screens.

 Younger users use financial control and digital banks with more facilities, usually with some more classic bank.

 Older users tend not to have financial applications but to communicate.

 All users like and have communication applications.

 Users with less time to use Smartphones are older.

 Practicality with routine is what makes users happier.

 Applications that fail little, are fast and clean draw more attention.

 Newer users download, delete, and re-download applications as needed.

From the results obtained with the first step, we proceeded to a new observation process, this time in person and continuously, in which the chosen user had its characteristics attributed and correlated with the results obtained in the first stage.

The analysis had the purpose of monitoring the behavior of a user with an older profile, being 44 years old, since this profile presents different reasoning patterns compared to other profiles, thus introducing in her routine a mobile device application used by the first, an application that is Banco Inter[1].

The user was submitted to constant, continuous, and questioned use to identify the difficulties encountered, challenges overcome and facilities found. In addition, the analysis took about 90 days for the user to identify the application, to become accustomed to the product so that it was finally possible to identify changes in behavior, user loyalty to the digital application and enthusiasm for future uses of other similar applications.

tuThe chosen application reflects the needs of the user, a digital account without charges, that does not prevent to use because of restrictions in the name and that allows you to withdraw the time that you need. In addition, it offers the possibility of credit, also desired by the user, and an investment facility that would allow the user in a degree of maturity in the application to be able to apply in investments that offer benefits compatible with the personal objectives of the user.

In his first contacts with application to the user he was nervous, with great fear in making records and incorrect manipulations. He asked for help for several moments, which showed a high degree of insecurity with the application. "I never understand these things, I always do something wrong and I need help. There is a lot of information, a button, a text, everything is very close together, I am stupid for these things." ROSANA (2018)[2].

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1   Brazilian online banking application.

2   Fictitious name used to preserve the integrity and security of the user studied.

Thus, the behavior pattern of the user can be seen, which can be compared to the previously mentioned data from the user profile:

PROFILE - CLASSIC / CONSERVATIVE

Features:

 Older users

 Short time to use Smartphones

 Precious for few functions and simplicity

 Do not install new Apps frequently

 Usually have behavior shaped by applications

The analysis went ahead with completing the data the user demonstrated satisfaction, although there were several steps, was still less bureaucratic and practical than a traditional bank. After sending the documents, the institution requested that it await the analysis of the documents.

With the documents approved, at the first access to the user she felt comfortable starting the process, however upon initiation she found it difficult at the moment when the bank requested double authentication, with code in SMS and email, however the code via e- mail is not received, so the user has requested help.

When analyzing with it, the problem was not identified, and to make sure the information we would like to check the registered email to verify if there were no failures, such an attempt was not successful because the email is masked and not there is an option to confirm or change the email.

So the resource found for help was the site of the Bank, which did not have the information of the area of doubts. with this the user was led to use the help chat, which was interesting and fast, but after confirming the data and information of the attendant that would be sent to another sector, the chat was not answered again and the user showed frustration, insecurity and discouragement, even thinking about canceling the opening of the account. After a few days without resolution, the user who had already been frustrated strongly with the results obtained abandoned the application and gave up the tests.

After this analysis, it is verified that the analyzed user's attitude reflects the principles defended by NORMAN (2004) in which the emotional design, see figure 2, is responsible for the aspects of adherence to a product. Regarding the visceral design, the user demonstrated strong aspects that this sense was sharpened and the application aroused interest, however when she was questioned

about her intellectual and cognitive ability in the face of the problems found to solve her access problem, the application, it is noticed that for having a Classic / Conservative profile it was necessary persistence so that it was not abandoned in the first moments, besides it is worth mentioning that as a characteristic of the profile, being this proven with the analysis the user kept the application in his cell phone , even without even being able to use it.
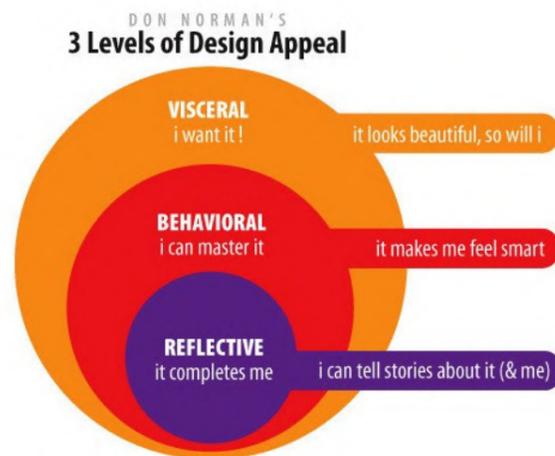
Fig.: 2 Níveis do Design Emocional, Donald Norman. Available in: <https://cdn-images-1.medium.com/max/1600/0*bZtJqzkowT5_-EP9.jpg>

Once the user of step number one abandoned the use of the application, it was understood that this stage was closed and thus was followed up to the studies a new step to identify the relations of the visual aspects and intentions of the users according to each application of the financial sector in which the user would begin to use or test in new scenarios.

An online profile evaluation form was applied to verify how the user behaved in relation to the subject addressed, this form was input to a face-to-face interview that was used to prove or refute what was described by the users.

The analysis was carried out with 5 users (Kevin, Matheus, Lucca, Vanessa and Tauane[3]) both of the same age group, between 20 and 25 years, representing the opposite side of the study carried out

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3 Users with a dummy name used to preserve the integrity and security of the user studied.

in the first stage, but in different profiles of application usage, besides the application I was using, 3 were really new to the test applications and 2 already had the application or more than one. The study was done face-to-face, in an interview format and in observing the use of the application at different times, respecting Lazarsfeld's (1940) process and his previously mentioned field empirical approach.

The initial notes of the study were focused on the profile of the user and on the main habits and applications used, see figure 3. At that moment it was possible to define the application and to understand how the user related to that application. Among the applications tested were Nubank, Banco Inter and Banco Next[4].

CONTENT ANALYSIS

The Nubank application has a totally digital service proposal, without paperwork and signed papers. There is no physical agency facilitating the user. The application essentially becomes a credit card, and with this it is only a negative highlight that it is not totally willing to all the demands of its users services making the user need to use more than one application at the same time without time save your yearnings for an all-digital bench.

The first screen of the application displays a list of the time, informing all related data such as user, user, registration, shopping trips, to closed and paid invoices.

One of the most interesting tools of this application was the location map of the store where the purchase was made. This is an excellent way to recover a purchase that is not forgotten, without any power to consult an operator. The practice is easy to practice and practice, as some events when updating data is not clear in the interface.

In the Bank next There are some variables within the application, which contain a modern layout and quite a lot, young demand. Oh, it's easy to use and super self explanatory. The characteristics are: Flow, Objectives, Kitty, Savings and Mimes.

An interface makes users not feel attracted, mainly to the older audience, but with time to the user, that is, in the first to use the somewhat bother.

Inter Bank has everything a bank can offer and in the palm of your hand, and it can be on the computer screen as well. The services are all presented in a very simple way in the application, all of them are free.

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4 Brazilians online banking application.

In addition, it also has debit card and international credit without annuity. The user only receives the credit card for the approved, which is not so fast. Still, it is not difficult. The request is made by the application. You can send some documents that prove it or not. Finally, the entire answer is sent by email.

RESOURCE OF THE LISTENERS

As far as the alert data are concerned, the maps represent the first part of the study and have the characteristics already marked for the use of the applications, see figure users, and some previously adopted the pattern of requesting an application to be used with the other .

Nome do usuário	Principais Comportamentos	Insights da Avaliação	Atividade Proposta	Resultados
Kevin, 19	He values security and believes that security is not directly linked with ease. Low on-demand applications. Precious for simplicity and strongly influenced by friends. It has more than one financial application.	Fun makes the user keep the application. Memory causes the user to worry about not leaving the application. Money at stake. Investment, for fun.	Give FeedBack to Nubank Bank and describe the experience. Use the Inter Bank Application and describe the experience	He found the Inter bank parsimonious with a tranditional bank he used, he said that it reminded him of the bravado even by the vocabulary and the way of dealing with the client. As verified that the bank was similar to the traditional assimilated to the bank safely as well. In giving Feedback to Nubank Bank he felt welcomed and unlike Inter, he found the language more friendly.
Matheus, 23	Download applications very often. Accompany finances. It uses many apps you like to test. Apps geared towards leisure or gameplay are a lot of fun.	He sought the Inter Bank for the need to work as a legal person. Applications with gamefication pass a lighter image. Previous experiences are relevant at the time of the new application.	Give FeedBack to Nubank Bank and describe the experience. Use the Next Bank Application and describe the experience	The user had trouble with Next bank, but found the service very quick. The simplicity of service makes it a standout. Could not give feedback to Nubank, did not find the option clearly.
Lucca, 22	Precious for security with a traditional bank. Ideology caused the user to erase the application. Influenced by friends. Uninstalls applications shortly afterwards that verifies that it does not use, if it is necessary to download it again it lowers and then erases again.	Ideologies make users interested in the application. The ease of finding a feature should be applied to other applications. Not getting eased, the timing of life makes it easier not to need to take out.	Use the Nubank bank chat requesting clarification of a doubt. Using the Nubank bank's cobra feature	When giving feedback to Nubank found the robotic message, it was not a humanized service as expected, and this breach of expectations meant that it no longer wanted to give feedback to other applications. In contrast, the use of the billing functionality occurred in an easy way.
Vanessa, 21	Search for fun app. There is not a frequency for downloading new applications. Uses Nubank and Inter Bank.	Application Hype makes it search the application. Delay for approval in the applications left a bad impression.	Use the investment function of the Inter Bank and transfer and propose suggestions to the bank Nubank	When giving feedback to Nubank found the answer quick but did not find the message clear, the return was not satisfactory. In addition, when using Inter Bank, he sought the same features as Nubank, but he did not find it simple.
Tauane, 22	Afraid to leave your money in new applications. It is extremely controlling with money and card bills. I care a lot about your spending and look for new applications to control them. You are afraid to test what you do not know well.	Unsafe users are looking for reviews of people close to you. They are strongly affectively influenced. Very simple applications generate mistrust.	Use the Nubank Chat feature with suggestions and use transfer.	When giving feedback to Nubank found it very easy, it was answered by one person, which left the process more humanized, this was very positive in the view of the user. Making the trip found a bit of difficulty, but managed to accomplish the task.

Fig. 3 User evaluation Vs. Applications. Authorship. 2019

PUBLIC SATISFACTION

The interviewed users are satisfied with the applications tested, for several moments they understand only as single style since the ease and the thought in the user is perceptible. A very commented factor was in relation to the feedbacks that were not humanized and this was necessary, which was

what most impacted the users to take this behavior forward for other types of applications.

In general, it is well known that the applications also provided a clearer picture of financial spending and control; some users referred to applications as a process of financial education and empowerment in financial independence, see Figure 3.

Considering Pierre Levy's (1999) view of the concept of virtualisation, where information from physical space is transported into cyberspace so that a replica of the physical in the virtual can be created, this research questions: physical space materialized in cyberspace impacts on the user? What is the reality of mobile applications?

The importance of this research is to understand how ergonomic studies on usability impact on the formation of new social behaviors and how the user experience of digital products can imply in social relations.

For this reason that at the end of the analysis, it is clear that the mobile interfaces have a strong influence on the life of the user, these aspects are reinforced by noting that a user ceases to practice a habit or action, due to their exposure to an interface with period of determined use; or by requiring and seeking the same standards from one application to another.

In users who used more than one application of the same segment, the fluidity in navigation was more evident since similar elements constructed a learning curve of the segment and not simply of the application, that is to say, when using similar terms and icons the applications passed to the similar messages in which there was a simpler recognition and facilitated the user's performance. In the publics that used the application for the first time or only used a different one from the one previously requested during the tests the performance was lower and in this case it was notable that nonstandard experiments tended to the good or the bad of the application, that in that if it forms a pattern of new behavior in the user, whether it is not giving feedback to any other application, or giving feedback to other applications.

It is worth emphasizing that the studies related to interfaces and digital ergonomics should always be updated, this study allows a partial and limited sample of the transformation capacity of habits provided by mobile interfaces in the current society, presenting a classification for user profiles and specifying the relation of one of these groups with interfaces of financial applications.

Considering Levy (1999), questioning the reality in mobile applications and the relation of physical space to reality was important, now with this study it may be infringed that: By immersing himself in the digital universe, the user carries his / her current experiences, past and present. expectations during a browsing experience. At this time, the navigation that was previously physical, also passes to the digital field of the application and sensorial of the user. It undergoes emotional stimuli that are limited only to the user, since subsequently such feelings provoked by experience materialize in

new habits, change of existing habits and aesthetic changes of what the user experienced after having exchanged with the creators of the application and such exchange being absorbed in ergonomic changes in application.

Finally, it is worth highlighting an important point presented, and evidenced by this study that relates the ease of the interfaces, it is possible to affirm that the first stage of studies shows that when a user of classic profile is faced with very recent applications and with innovative proposals exists a degree of complexity since the age and behavioral pattern of that user is unlike that moment of creation of the application. With this it can be said that the interfaces and applications studied are more efficient for the younger audiences given the behavior patterns. With respect to the change points it is clear that the younger audience after a period of even short use can adapt to the application, while the older audience does not adapt. That said, it is understood that the financial product interfaces studied here are not fully prepared to serve all users, the patterns of various behaviors make the application to be adherent only to an audience and not assuming a totalizing interface role, that is , simple and usual for everyone.

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4th Millennium Architecture, Digital Exterior Architecture in future smart cities

Mina Ghorbanbakhsh

ABSTRACT

A revolution is happening; the digitalization's generation is overcoming the previous generations (Industry, Communication, Information). Nowadays, the instrument is only one; Digitization brings with it an anthropological revolution: enough with the programs from above, now we are the ones who cross-media and tailored content (Grasso, 2010). Moreover, Today's explosive developments in digital technology have also affected architecture and the urban landscape (Picon, 2010; Carpo,2107; Steenson,2017) Above all, this digital revolution has been formed based on concurrency, genesis, immediacy, and globalization and is focused on the information and communication technology.

By this definition, we can take to an account that, the city and Architecture of the future face the challenge of innovation in a process of evolution that involves society, economy, environment, etc. This need arises from a background that, in the last decade, has known significant factors of transformation. Environmental crises have instead focused the attention on the topic of sustainability (SGD,2015), according to new paradigms and cultural models. When it comes to smart citizens and culture, Citizenship can express its "right to the city" (Foth,2015) with a civic conscience on the part of the inhabitants who are increasingly aware and which manifests itself in the new IT channels, in a bottom-up process. And more beyond that New technologies have always driven innovation in construction, building design, and mainly Architectural projects; the technological advances of the digital age provide opportunities to deal with different terms and qualifications such as environmental, climatic aspects to widen the horizon in an architectural point of view (Oxman,2008).

Consequently, this investigation is an aim to offer an overall state of technology in history and history of Architecture and as well as Reading and exploring the architectural projects in which digitalization and technology had a great role in their existence, in their own time with the main focus on the wall, the creating element of architecture in the context of future smart cities. Projects which are going to be discussed are such as Jean Novel, Arab Institute, Herzog & de Meuron, SUVA House (The other projects are in the process of selection within the same criteria and are more recently, such as The shed, etc.). Moreover, Architecture in which technology doesn't belong to it (We always learn from the past) but at the same time comparing them to our current time it has smart thoughts and ideas. In which Smart Ideas and thoughts reveals smart architecture, smart citizen and smart city. Such as old housings in Yazd, such as Dolt Abad Garden, in Kashan, for example, Abbassi villa, Ameri housing

(Iran) and so on. Beyond all, this research is going to answer the mentioned questions:

Will the 4th Millennium Architecture adapt itself to the environment, climate and climate changes in which it is situated in it? How much digitalization and technology is going to interfere with our lives? and What can we learn with traditional systems?

KEYWORDS: Digital Architecture, Digital Culture, Intelligent walls, Smart Cities

1. INTRODUCTION

The world of communication is at the center of a profound and radical change: the telephone, as we have known and used it for years, is no longer the telephone; newspapers are not just more newspapers, they are changing skin and content; TV is no longer TV; even the computer will soon no longer be the computer. The digitalization of communication is bringing with it incredible evolutions both in the content distribution platforms and in how they are used. The engine of this evolution is the phenomenon of convergence. What is that? Technically, convergence is the union of multiple communication tools, a fusion made possible by digital technology. Each medium is no longer intended to perform a single type of performance but can disseminate different content (photography, radio, telephone conversations, TV, music). Convergence means using only one interface (the computer, for example) (Grasso, 2010). As Italo Calvino was saying "The second industrial revolution, unlike the first, does not present us with such crushing images as rolling mills and molten steel, but with "bits" in a flow of information traveling along with circuits in the form of electronic impulses. The iron machines still exist, but they obey the orders of weightless bits." (Calvino, 1988).These thoughts have developed and slowly penetrated in other fields. It has changed the trends of thought, product, consumption, commerce, management, communication, life, and environment. It is also rapidly reshaping the material basis of society. Individually without an adequate push for inclusion, through participation paths.

Many changes have also occurred to Architecture as a result of social changes. Some of these changes can be observed in the present age which is the age of digitalization. The current age, as the age of computers and ICT, has made significant changes to the trend of evolution of architecture. Besides all, through history, we have perceived that architecture has always presented the manifestations of different social attitudes and other different revolutions and also we have observed a strong link between architecture and social evolutions (Loumer, 2015). Therefore, this research is going to explore some important occurrence in Architectural component (The wall) within the digitalization era and the interference of ICT and digital technology in our lives in the urban context (smart city) and as further matter, this paper is also going to discuss the developing advanced and traditional technology based on the literature review of the scientific literature regarding technology in architecture.

2. SCOPE OF THE RESEARCH AND METHODOLOGY

The study has been carried out by identifying the state of the art on Digital Architecture within the background of a smart city including the cultural effects of this revolution, the digitalization revolution. Beyond the scope of this research in the first phase is an attempt to state an overall reading on the development of technology in history based on scientific literature review. Moreover, some architectural case studies (Case study Methodology-Second Phase) in which the digitalization and technology played and still is playing a fundamental role in their existence, in different countries have been discussed to realize how the architecture of the 4th millennium is going to be and reacts in the smart city. Furthermore, to comprehend the ability of architecture in the future according to the different circumstances and environments. The specific focus will be on the walls in all case studies which are going to be investigated. The impact of technology on the walls of architectural projects.

3. BRIEF HISTORICAL OVERVIEW IN CULTURE, TECHNOLOGY AND ARCHITECTURE

The industrial revolution was a key period in architectural and social developments. It was the first time in history we were able to harness the energy resources of the planet and exploit them to manufacture for an advancing society. The effects which had on our culture, our architecture and our identity were far-reaching and ultimately lead to a second great revolution; that of the more recent digital information age. Our current social identity has undoubtedly been defined by the gamut of technological advancements in the last century. Moore's Law that predicted a twofold increase in electronic processors every 2 years proved correct, as we saw exponential growth in digital and information technology that encouraged us to consume rather than produce. The Post-Industrial age designed a content society that was unaware or unwilling to budge from the comforts that our advances had afforded us. This led to increased globalization and social connectivity. The explosion of post-war consumerism across Europe and North America created huge economic growth and prosperity. It was only by the latter half of the century that we started researching and documenting the ecological effects our lifestyles we were having on the planet (Markos Hughes, 2016).

Furthermore, the invention of the computer during the second world war appears as the next step in the quest for massive data processing machines that had already given birth to tabulators. Moreover, in 1970 there was a new episode, the invention of the personal computer in which with itself carried and accompanied the early developments and uses of the computer since some of the assumptions made at the time still exert an influence today. Through approaches like cybernetics and artificial intelligence, system theory, and operations research, the computer was instrumental in shaping a new vision of the world (Picon, 2010).

By the turn of the 20th century, new building technologies were being employed to create a world

we wanted to live in. The architectural movements of the 20th century, notably in the western world, were greatly influenced by the industrial revolution, employing pure functionality as an aesthetic. The fundamental architectural dictum by Vitruvius of Venustas, (beauty) Utilitas (Utility), and Firmitas (Structure), was being influenced by the new technologies made available.

As the information age cultivated our desires for automation and efficiency, we took these ideas and applied them to our built environment, in Architecture. As we now look to implement Digital technology design as part of our buildings, we realize that the physical demarcations that define contemporary architecture are harnessed amongst the noise of our increasingly digital world (Markos Hughes, 2016). Beyond all digitalization had affected all spectrums of our lives, culture, cities, architecture, etc and that is the main reason to confirm that the rise of digital culture is inseparable from the spectacular progress of the interfaces between man and human and machine, and generally between the physical and the electronic worlds. Moreover, According to Nicholas Negroponte, the individualism dimension is what made the digital era fundamentally different from the information age and that is the reason why lifestyles are inseparable from its own time in digitalization time (Figure 1).
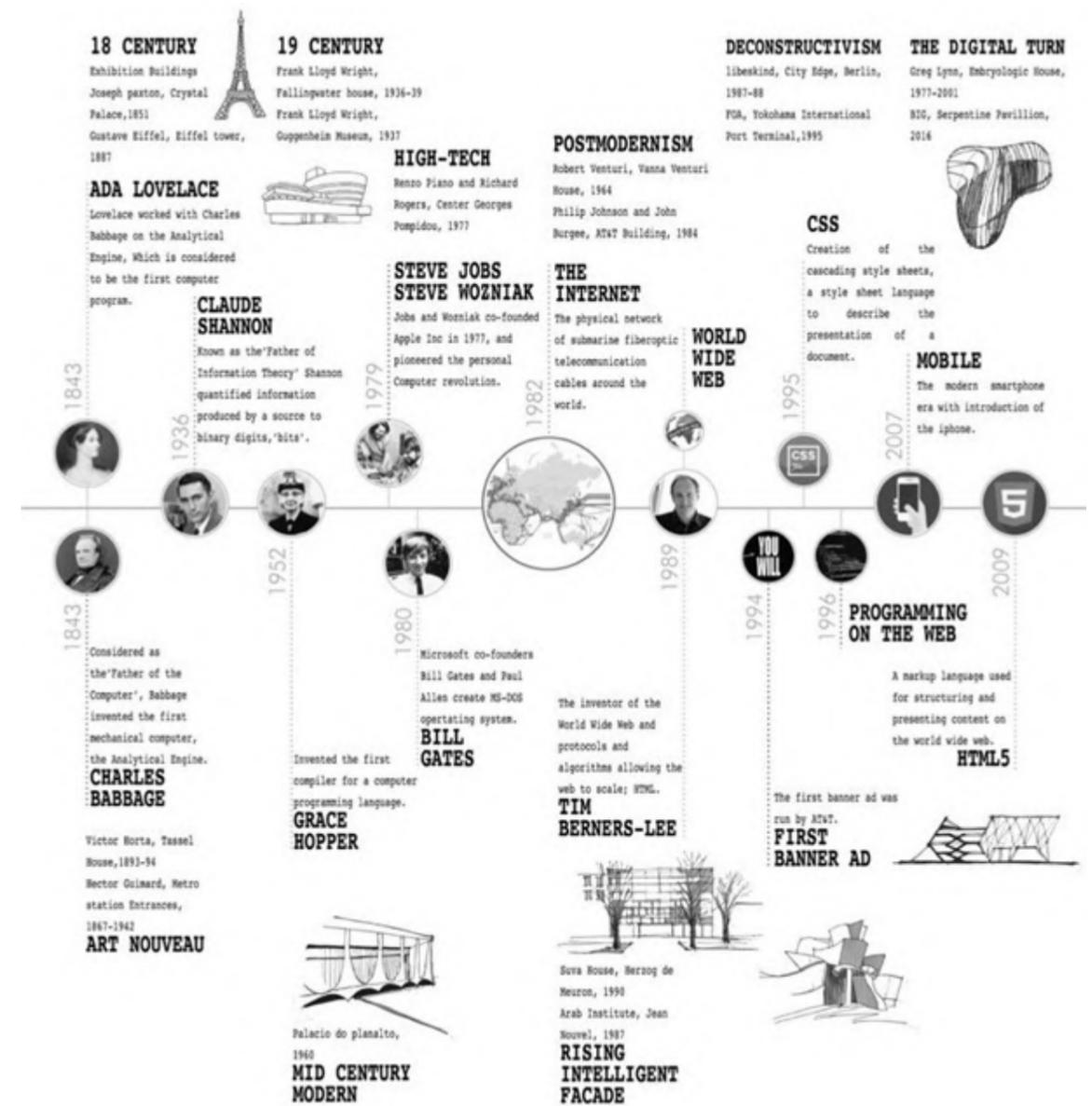
Figure 1. History of Digital and Architecture Timeline (Unknown, 2017)

4. DIGITAL INTELLIGENCE WITHIN SMART CITIES

As mentioned before one of the effects that can be considered as a major and important impact in human beings' lives is technology and digitalization era on the city, according to Carlo Ratti, Atoms and bits assimilate, creating new possibilities. The intelligent city has a wide range of electronic and digital technologies that enable its devices to communicate. Two closely related technologies, the

Internet of Things (IoT) and big data (BD), enable the transformation of traditional cities into smart cities (S. P. Mohanty, 2016). Moreover, The Internet of Things (IoT), the structure that smart cities rely on, is increasingly being powered by artificial intelligence (AI) and automation (Morrison, 2018).

Complex, large-scale infrastructures become unlimited data sources, energy consumption, waste, mobility, healthcare, instruction. Technologies, sensor webs, open databases, and ubiquitous information accesses. By these tools, Cities become aware and smart. Nonetheless, these are not the only elements needed in a smart city and it includes other Components, such as smart people, smart governance, smart homes, smart infrastructure, smart technology, smart economy, smart mobility, smart living, smart parking, and smart environment (V. Albino, 2015). However, as stated before the smart people is one of the components. Since cities must also have a soul too. that is why buildings and smart services need smart citizens, "active citizens". A smart city isn't made by people just responding to inputs, but by citizens performing an essential role, the leading role in the process of data collection and sharing. Connected citizens are the engine of urban change in the city of the future (Carlo Ratti, 2013). Cities that are labeled as smart are hybrid spaces that consist of materials and digital information such as Tokyo, New York, London, Singapore, Reykjavík, etc. Singapore's example of a smart city, the island has a huge number of sensors and cameras, which do not only control the traffic but also the cleanliness. However, Singapore goes beyond the wireless connectivity and sensors and has an open data platform related to data collected by sensors located on the island for sharing all the information (Stana, 2018). They rely on technological constructs of monitoring, actuation, computing, geo-localization, and networking (Latz, 2013).

Conceivably, the smart city needs a smart citizen and smart culture and a city without the citizens can not be smart therefore, citizens should show their participation in it. Smart Citizens can generate local maps of noise and air quality, use it to raise awareness and find solutions for issues that matter to the community. A smart city connects people with their environment and city to create more efficient and optimal relationships between available resources, technology, community services, and events in the urban fabric. This connection is a tool that links the implementation of the smart city and the proposed technology.

But what can be the role of architecture in the smart city? How can they cooperate beside the smart citizens? As an example, City walls (facades) are showing the citizen's smartness and also their interactions with the city and Architecture. It has been around ten years that the Media facade Festival is happening all around the world. The Architectural wall role as an entertainment for the citizens via the technology tool. And definitely, this is just one of the potentialities of the Architectonic wall. One of the main and best ways for the smart city to interact with architectural projects could be the functionality of the outside and inside surfaces (Exterior walls). For example, the living wall or the cellular wall in the urban context could function, in terms of the environment, human health and wellbeing. Moreover, it is not only the effect of it for the city but also the interior conditions and ambiance of the interior space can be changed according to the exterior walls and also according to the smart

usage of the citizens. Other potentialities of living walls are such as CO2 footprint and heat reduction, impact on air quality, health impact assessment, economic benefits evaluation, the establishment of winning economic models, etc. All in all, everything has a dependency on the other element. It is just like the human body. If one of the parts of our body stops to work, we won't function as before. It is like the concept of component and the whole. The participation of the citizens and Architecture and other elements together creates the Smart city. The success of smart cities relies on citizens engaging with technology solutions, but citizens must also take a leading role in their design, creation, and maintenance. Professional disciplines will be required to work together with citizens to co-create solutions; designers, engineers, social scientists, technologists, psychologists, planners, architects, artists and many more must collaborate to make our cities better places in which to live, work and play (Open Learn).

5. SOFTWARE, SYSTEM FOR DIGITAL ARCHITECTURE

The term "digital architecture" has been coined by William Gibson in 1984. CYBERSPACE, The world of digital architecture is largely a visual statement. "Cyber" here means "computer processed", conjoins the suffix "space". The digital architecture uses computer modeling, programming, simulation and imaging to create both virtual forms and physical structures The terminology has also been used to refer to other aspects of architecture that feature digital technologies. Architecture created digitally might not involve the use of actual materials. The digital architecture allows complex calculations that delimit architects and allow a diverse range of complex forms to be created. Digital architecture has reinitiated a debate regarding curvilinearity, expressionism, and the role of technology in society leading to new forms of non- standard architecture. But Just as there is a difference between building and architecture, there is also a distinct difference between digitally generated projects and digital architecture.

In 1992 in which for the first time we have heard CAD (Computer Aided Design). Columbia university paperless studio, one of the first large- scale attempts at using computers for architectural design, was still considered by many as a whim. Since that time architects have been confronted with an advancing tide of electronic equipment and software applications. And since then the digital revolution is still continuing and digitalization in Architecture did not remain in one place and it is more developed and it is going to be more advanced and even we see the impacts of it in Architecture itself such as intelligent facades which they function through digital technology and even more beyond that turning, transforming buildings and more.

Furthermore, The development of digital culture is inseparable from a major transformation of our definition of materiality, at the intersection of technological possibilities and sensory evidence. Through its renewed interest in dimensions like an ornament, digital architecture fully participates in this evolution. Indeed, contemporary architectural ornament possesses a strong sensory dimension,

visual but also tactile, while being related to digital processes like zooming and pixelization, a blend especially present in Herzog & de Meuron's production.

Two projects which are going to be discussed are as follow Suva house by Herzog de Meuron and Arab Institue by Jean Nouvel. The reason and criteria which got established for the selection of these projects are that the main element in architecture which creates spaces, with different qualities and sensations is a wall in which we are always surrounded by it. The wall creates boundaries, intimacy, privacy, security, comfort and indeed it is an inseparable and integrated element in architecture. Even though years and in the future, it will always be and it will be just adapted and altered within the new technologies, materials, etc. Moreover, any other perceptions and interpretations which are given to us through space are because of the existence of the wall. Furthermore, In these projects which are constructed and designed in the nineties, the evolution of digital technology is dominant, And the technology which functions in it is specifically related to the walls and the most important fact about it is that the wall targets the environmental, climatic point of view and it tries to adapt itself to the environment in which it is surrounded by within the digital technology.

Suva house, Herzog de Meuron

Herzog de Meuron (1993) concluded that:

SUVA House, Extension and Alteration of an Apartment and Office Building in Basel, Switzerland (1988-1993, Herzog & de Meuron Architekten). There were two options for enlarging the SUVA Basel branch: demolition of the existing 1950's building to give way for an entirely new building or addition making use of the corner site. The retention of the old building gave rise to the solution of a glass enclosure covering both new (offices and apartments) and old buildings. The enclosure system consists of horizontal glass strips of different optical and physical qualities.

The transparent panels in the viewing section of the offices can be individually operated, and add to the acoustic insulation of the existing windows. The panels within the parapet section bear silk-screened images while the prismatic panels in the upper window area improve the building's insulation and protect it from the sun. The silk-screened panels are operated by a computer. The glass enclosure unites old and new into an acute corner building giving it a coherent urban presence. At the same time, the transparency and operation of the glass panels reveal the configuration as a conglomerate of two volumes. This permutation of appearances is an important characteristic of several Herzog & de Meuron's projects and buildings (Figure- 2).

Arab Institute, Jean Nouvel

Jean Nouvel (1987) concluded that:

Located at the threshold of the historical peripheries of Paris along the River Seine, it responds to its immediate context both in plan and elevation. In plan, it follows the curvature of the road, whose form is dictated by the river. Its 2 main volumes encompass an inner courtyard with the north mass rising 9 stories and the southern portion rising to 11 stories. A paved plaza provides an element of separation from the adjacent Universite de Jussieu and the main volume of the building. Further enhancing the outdoor spaces is the paving that mimics the patterning of the façade. Recessed ground lights complement the light play that emanates from the interior of the structure at night. The interior spaces house numerous typologies including a restaurant, museum, library, offices, and auditorium. A multi-story glass atrium is wrapped with a steel staircase featuring exposed elevator lifts on the interior. The library and northern portion of the 4th-floor feature increased floor to ceiling heights as well as incorporating numerous terraces and a mezzanine.

He drew inspiration from the traditional latticework that has been Typical of Jean Nouvel's work is his attention to façade detailing, and this design is no exception. The main feature and innovative element of the IMA is the advanced responsive metallic brise soleil on the south façade. Nouvel's proposal for this system was well-received for its originality and its reinforcement of an archetypal element of Arabic architecture – the mashrabiyya. He used for centuries in the Middle East to protect the occupants from the sun and provide privacy.

The system incorporates several hundred lights sensitive diaphragms that regulate the amount of light that is allowed to enter the building. During the various phases of the lens, a shifting geometric pattern is formed and showcased as both light and void. Squares, circles, and octagonal shapes are produced in a fluid motion as light is modulated in parallel. Interior spaces are dramatically modified, along with the exterior appearance. While these ocular devices create an incredible aesthetic, they are functional from an environmental control standpoint as well. Solar gain is easily mitigated by closing or reducing the aperture sizes (Winstanley, 2011) (Figure- 2).

Figure 2. Suva House, Basel, Switzerlands By Herzog de Meuron and Arab Institute, Paris By Jean Nouvel(From Left to Right)(Archdaily).

The reading of these two projects allows us to understand better the role of technology in Architecture and its components. As have seen in the Suva house project, the technology has been started to exist in architecture because of the material used in the façade. Due to the controlling the light coming in the interior space and also as insulation of the building. By end 80's and 90's Transparent materials (glass and polycarbonates) were becoming a popular cladding material, not only designed to illuminate the building's interior but also because of their ability to change the appearance of the building depending on the lighting conditions and due to their high durability and resistance against climatic conditions. This unique feature of glazed envelopes pushed architects and designers towards extensive use of glass, not only on light-permitting/illuminating sections of the façade (also called visual regions of a curtain wall) but on the whole surface. The same is happening in the other project, The Arab Institute by Jean Nouvel, the exterior façade is alive and it acts as an eye, controlling the sunlight. Indeed, Arab Center's wall is alive with 30,000 Mechanical eyes. Since the kinetic wall is facing the south, the building controls thermal exposure and interior lighting with a single system. Definitely, by the time the buildings façade or walls, have been more developed, as we see in the Shed by Diller Scofidio and Renfro (2019), The wall plays a role before-mentioned as the human body (Figure- 3). And as a matter of fact, technology is ever more present in our reading of past and nowadays Architecture.
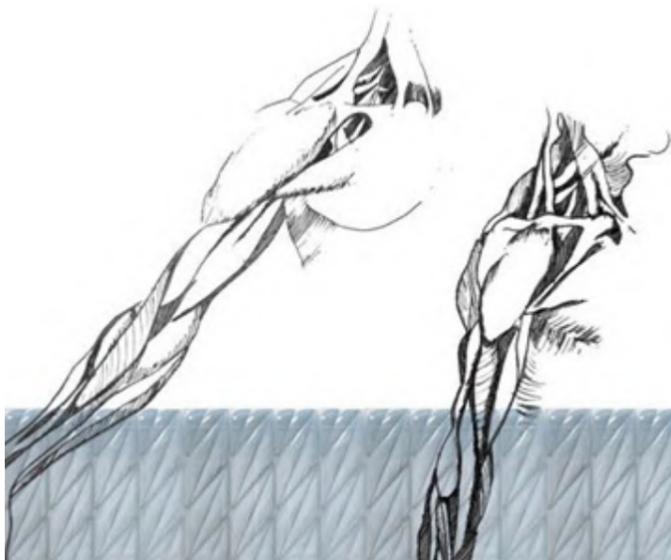

Figure 3. The human body (Muscles, Skin) and the art of architecture (Diller Scofidio+ Renfro, the shed façade, 2019).

6. ANALOGIC THOUGHT FOR SMART ARCHITECTURE

Smartness without technology, Smart Ideas and thoughts reveals smart architecture, smart citizen and smart city. The main criteria to choose this case study which is technologyless is that there is always a possibility to have a look at the past and being inspired by their approach toward architecture. By having a look at the architecture of the past, it is possible to realize that the Climate has a major effect on the performance of the architecture concerning its air conditioning and its energy consumption. Lack of water and energy resources in hot and arid regions forced architects to build their houses with some strategies based on minimum energy consumption. In the past, only intelligent architecture in the arid regions regarding ventilation enabled people to tolerate the hot summer. Dolat Abad palace, Garden in Yazd, Iran (18th Century) is one of the cases discussed in this paper.

There are two main elements in this palace which one of them is the wind-catcher (Persian: Bâdgir), sometimes called "wind tower," which is a traditional structure that has been used for many centuries to provide natural ventilation for the architecture in arid and dry regions. The wind-catcher structure is a section of the architecture in Iran and neighboring countries (Battle, Zanchetta, and Heath 2000; Fathy 1980; Karakatsanis, Bahadori, and Vickery 1986).

The cooling system of the Dolatabad Garden wind-catcher works with one method: the air flows inside the building passes over a small rocky pool through the water jet and is channeled to other rooms. And the second element which plays an important role in this palace is the thickness and the material of the walls (external walls) which are in clay. In this region with a dry and warm climate has been used for a long time for the improvement of energy efficiency, comfort, and indoor environmental quality. Moreover, External walls were not only made exclusively for interior space environmental management but also for cooling down and creating shades for the citizens walking in the surrounding of these Architectures.

In recent years, digital technology has emphasized the use of ventilation systems and also the external walls (Intelligent Facades) have characterized the design of the architecture.

7. CONCLUSIVE REMARKS AND FUTURE RESEARCH PERSPECTIVES

This work is the result of the study of some few case studies in the early stage of the first year of Ph.D. studying. Besides the case studies that have been discussed and mentioned in this paper, there are other case studies, "architectural projects" which are going to be discussed and compared. To comprehend better the advancement status of digital technology and the effects of it in architectural projects, with the main focus on the walls and external walls during the last decades in the urban tissue. The conclusive remark which has been carried out in the early stages of this research is that the intelligent features in the wall require integration of responsive dynamic capabilities, which al-

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low for changes in the wall's configuration based on daily and seasonal stimuli, and considering the surrounding environmental context to reduce the energy consumption and increase the building efficiency. Developing architecture with intelligent features should achieve better performance by implementing the following processes: Creation of a relationship between the occupant's behavior (citizens) and indoor space condition. Provision of automatic adjustments in response to environmental changes and occupants' requirements. Based on the consumption and smart behavior of the citizens and other components of the smart city, the smart city will have a definition.

The use of digital technology systems integrated with architecture for the control of the climate and the promotion of bioclimatic principles (Ed van Hinte, 2003) as well as the use of intelligent materials in building skins have a direct positive effect on the energy consumed in architecture and their overall impact on the environment. In this sense sustainability in buildings can be achieved with the integration of intelligence and usage of digital technology. Moreover, the new intelligent materials and nanoparticles can promote sustainable material usage and preservation of the natural resources of the earth. In conclusion, further research on the field of integrated digital systems and intelligent materials are needed to enhance and establish them as a common practice in the Architectural project.

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SESSION 4

DIGITAL COLLECTIVE MAPPING THROUGH PUBLIC PARTICIPATION'S PROCESSES TOWARD A NEW TERRITORIALITY IN CONTEMPORANEITY

How bottom-up web 2.0 cartography can define a collaborative digtal space in the processes of urban regeneration? With the growth of technology for storing and sharing maps, collaborative-maps enable modeling and inter-play a number of complex socio-economic and cultural data. This has been applied to promote design strategies in urban studies research based on GPS location data shared in real time among users that can edit and integrate contents.

The physical space is translated digitally and enriched with local information. Digital technologies have restored the importance of space. Digital maps produced by collectives may be a prelude to a radical revolution in urban representation and in the relationship between cities and citizens.

ISABEL CARVALHO

PhD in Digital Media-Art from the Algarve University and Open University. Her research interests focus on locative media art, collaborative mapping processes (through the application of digital tools), dynamic maps in urban analyses, digital art and augmented reality.

Moderator:
Laura Pomesano

(...) Mobile communication devices (smartphones, tablets, etc.) allow the creation and emission of information in real time, individually or in a network, and citizens can participate in the production of content to include in the study of urban form. It is recognized (especially from the 1960s onwards) a growing interest in how the city is transformed and how the dynamics, participation and role of city dwellers have implications for processes of urban reconfiguration (Mumford, 1961; Smithson and Smithson, 1967).). Thus, more than the technological issue and its capabilities, the cultural dimension involved in this process is highlighted. According to Nummi and Tzoulas (2015, p. 167): principais Key features of cultural mapping include a solid focus on citizens and a bottom-up approach."

Carvalho, Isabel and Viana, David. "O estudo da 'forma-dinâmica' urbana através do mapping de dinâmicas sociais e da apropriação espacial" 2016

keynote speaker

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PRESENTATIONS

Technical Assistance in Social Cartography for the Right to the City

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ABSTRACT

Social cartography is a relatively recent technique that opposes to traditional cartography, while this last one's purpose is to control the territory, social maps serves as instruments of counter-power, that is, it brings the tolls closer to the ones that normally wouldn't have access to it. Social mapping is an important mean in the defense of threatened territories, such as urban occupations, rural, indigenous and other traditional types of communities. Recently, in the face of the frequent threats of removal suffered by fragile communities, social cartography can be used as an instrument of resistance and strengthening by those living under such threats. From a problem that one wishes to solve, the community must come together and work in partnership with the technicians to build a social map that reflects their own reality. From a social cartography perspective, participation implies going above and beyond the local level of consultation, ensuring the involvement of social actors in the broader formal and informal decision-making process. This includes broadening the representativeness, strengthening it so that the residents of the community claim their rights in the decisions that affect their territory and their own lives. This article seeks to discuss the practice of social cartography, which was built mainly in the field of geography, and to dialogue with the practical experience of technical advisory in architecture and urbanism to communities at risk. The social cartography practice is here presented as an alternative instrument in the search of dialogue and representativeness in territorial decision-making, and it is here used especially by those who are often pushed aside and taken advantage of. Through workshops in vulnerable communities, efforts are being made to expand knowledge about social cartography to those groups that most need it. As a result of these workshops, it is hoped that the knowledge of this tool has empowered these people as to their right to produce their space over traditional means used by the government. It is not an easy alternative as a means of city production, but it is a democratic tool that should be known to these groups.

KEYWORDS: social cartography, social map, power mapping, collective mapping

INTRODUCTION

Since the second half of the twentieth century, urban growth has been occurring in a disorderly way in most cities of Brazil. Housing production through the real estate market and public power does not keep pace with demand, and the State's lack of commitment to urban housing policies further aggravates territorial disputes. Within this scenario, access to decent housing and to the infrastructure of the city by the low-income population is further impaired. The problem of housing in Brazilian cities goes beyond the technical barrier, and begins to enter a political panorama. The population is always on the margins of formalization and subjected to a political scenario of extremely changeable interest. After the period of re-democratization of the country in 1945, from some more progressive municipalities, we have a legislative and institutional advance of the public policies in this scope. But at the end of the decade of the 1980s and the beginning of the 1990s, with the change of government, there is a dismantling of these initiatives, from then on begins a period when few and dispersed investments in housing occur (PEQUENO, 2018).

In recent years, new initiatives have emerged in the country through collectives, professional entities or private companies that propose to work with assistance or technical advice. In this context, occurs the creation of Taramela, a group of professionals and students in the area of Architecture and Urbanism, linked to activities in favor of the right to the city, with practices such as workshops, lectures, popular formations, projects, public policies with various entities, such as social movements, associations, universities, among others. In Fortaleza, the city in which Taramela was born, the housing problem and the incongruous answers of the State advance the problem of housing deficit and culminate in excessive population density, growth of the informal market and gentrification (PEQUENO, 2018). Given this context, the territorial struggles and the debates on public policies in the urban and housing field arise.

In this article, the notions of social cartography are explored at first, with the purpose of conceptualizing the proposed action. In a second moment a brief diagnosis is made on the context of social inequality and housing precariousness of Fortaleza. In the final part of the article, Taramela's work is analyzed as a means to strengthen the references of national and local experiences, making use of social cartography as a tool in the fight for the right to housing and to the city.

LITERATURE REVIEW

The first source reviewed was the book "Metrópoles brasileiras: síntese da transformação na ordem urbana 1980 a 2010" organized by Luiz Cesar de Queiros Ribeiro and Marcelo Gomes Ribeiro, this book aims to analyze and compare the urban transformations of the main metropolis of Brazil in the last thirty years. The book seeks to synthesize the local-national dynamics of convergence and divergence of the urban order of the main Brazilian metropolises. The chapter two of this book "Fortaleza: transformações na ordem urbana", written by Renato Pequeno, is a detailed essay on the actors and producers of the urban space of Fortaleza, as well as a well illustrated description of how the development of the metropolitan region of Fortaleza has occurred in the last thirty years. In this article, the information on the development of the urban space of Fortaleza in chapter two of this book was used to describe the scenario in which Taramela is inserted and where social cartography practices were applied.

The second source reviewed was the book "Cidade Estado Capital: reestruturação urbana e resistências em Belo Horizonte, Fortaleza e São Paulo" organized by Raquel Rolnik, it shows how the growing association between state and private sector has caused changes in the urban space and its forms of government, with the weakening of democratic decision-making spaces. This publication intends to analyze and monitor public policies aimed at urban development in the cities of São Paulo, Belo Horizonte and Fortaleza, and their impacts on the processes and territories they intend to restructure. The forms of resistance to these processes present in these cities were also studied. The chapter written by researcher Valéria Pinheiro about the processes observed in Fortaleza, analyzes the different public policies, programs, projects and updated / modified laws of the municipality. The LEHAB UFC group, of which the author is part, also accompanied and participated in struggles and resistances in this city. Like the first book of this review, this one was also used in this article to describe the scenery of Fortaleza and to clarify the means of urban transformation and resistance that exist in the city.

Next, the two books organized by Henri Ascerald, "Cartografias sociais e território", published in 2008, and "Cartografia social e dinâmicas territoriais: marcos para o debate", published in 2010, were reviewed. Both of these books begin the discussion of cartographic production and social cartography. The first discusses the different subjects and the objectives of the use of mappings, also analyzes the power relations and territorial appropriation present in the elaboration of maps. The second enters more into the issue of the space producer and the symbolic struggles between groups with their own specific identity and the traditional space-producing state. In this article, both these books were used to better understand and describe the cartography process, as well as to begin the discussion about the production of social cartography.

Next, the book "Cartografia social e cidadania: experiências de mapeamento participativo dos territórios de comunidades urbanas e tradicionais", organized by Adryane Gorayeb, Antonio Jeovah de Andrade Meireles and Edson Vicente da Silva, continues the discussion on social cartography. This book describes the context on which social cartography is necessary, as well as exemplifies the communities that take most advantages of the use of this representative tool. In this article, I make use of such examples to describe a scenery on which social cartography was a necessary tool of empowerment to a community in vulnerable situation.

The next article reviewed, "Maps of, by, and for the peoples of Latin America", by Peter Herlihy and Gregory Knapp, is a collection of essays of different groups that make use of participatory mapping in Latin America. In the article, the methodology and the research of each group is described and discussed as a way of transformation of spatial knowledge into map and other descriptive forms. Here,

in this article, I make use of the examples to better describe how the practice of social cartography first became known and with what purpose.

Finally, the article "Cartografia social dos povos e comunidades tradicionais no Paraná: novas perspectivas temáticas para a cartografia", by authors Nilmar Pussini, Adriana Pidorodeski and Bruno Henrique Costa Toledo, was reviewed. The article review and describes the different forms and methodologies of cartography representation. In this article, I use this information to show how and for what reasons social cartography is a democratic representative tool to be known by vulnerable communities.

METHODOLOGY

This article is structured in three steps:

Theoretical framework: reading and writing about the themes studied in the article (social cartography, social map, collective map). Looking to extract general guidelines from these readings.

Practical workshops: preparatory study workshops followed by field workshops, together with the communities where the social maps were developed.

Digitization: compilation of the data expressed in the social maps and digitization, using GIS software, to elaborate the social cartography. After the digitization step, the maps are returned to the communities.

RESULTS

The two communities where the social cartography workshops took place presented two different results. The Presidente Vargas community, where the social cartography was developed as a tool to strengthen the land tenure process, presented a very positive result. The social cartography not only enriched the process to the eyes of the judges, but also brought the community together and empowered the residents to fight for their neighborhood.

The second workshop, held in the Verdes Mares community, while strengthened the community to fight together for their right to stay at their homes, it did not have the same positive outcome as the first one. The community continues to be threatened and effectively removed from their homes to make way for the major works of the municipality.

THE IMPORTANCE OF SOCIAL CARTOGRAPHY IN URBAN MOVEMENTS

Maps are a representation of the world, or a fragment of the world. They could represent a country,

a city, a neighborhood, etc. In the process of history, documentations are made by those who dominate, often with specific and unilateral goals. In this way we have the world map with deformations in which the countries of the Northern Hemisphere seem larger than the countries of the Southern Hemisphere. We also see that, for the most part, the European continent is positioned at the center of the map. We thus perceive that the colonizing countries take a central position in the cartographic imaginary (ASCERALD, 2008).

Social cartography appears in this context of territorial injustice. One of its most important characteristics is therefore the non-hierarchy in the construction of the map. It is from this horizontal knowledge exchange that it is possible to develop a collective understanding about a particular place. The information shared in this process is translated into a truly collective and participatory map: the social map. This map shows the different realities experienced by each participant in the process, and how they perceive their own space. Through the exchange of subjective perceptions and different experiences, as well as a process of sensitization and deep reflection, it is possible to understand and represent the different social dynamics, as well as the social disparities in a given territory. In that way, social cartography allows us to develop a new look at our territories (GORAYEB; MEIRELES; SILVA, 2015).

The first social mapping experiences were denominated "participatory mapping" in the international scenario. For Herlihy and Knapp, participatory mapping recognizes the spatial and environmental knowledge of local populations and inserts them into more conventional models of communication. Pioneering experiences in this field occurred in Alaska and in Canada in the 1960s, making use of participatory research methods combined with technologies such as GIS – Geographic Information Systems, Global Positioning Systems (GPS) and remote sensing were developed over two hundred maps of Eskimo subsistence seasonal activities in that area. This mapping resulted in the publication of the book Maps and Dreams and signaled the beginning of social cartography as we know it today (HERLIHY; KNAPP, 2003).

Starting in the 1990s, numerous social mapping experiences begin to appear in the world. In this way, residents of traditional communities or people occupying threatened territories increasingly began to produce their own maps that reflected their livelihoods, conflicts and resistance. Those groups saw in social cartography an opportunity to report abuse of authority and a way to assert territorial rights. In Brazil, social cartography was first used in the early 1990's in the Amazon with Professor Alfredo Wagner's New Social Cartography Project from the State University of Amazonas. This Amazonian territory would be demarcated and divided in a Cartesian manner, if not for the social maps that were made there to show that the diverse uses of that territory were not contained in exact limits, but instead were based on the collective and multifaceted use (GORAYEB; MEIRELES; SILVA, 2015). The demand for social mappings most often comes from contexts of conflict, such as territorial and environmental struggles, in which communities, feeling threatened, begin to construct their representation of the territory, which generally conflicts with the private territoriality or even the

official demarcation by the State (ACSELRAD, 2010). According to Acselrad, in the period from 1992 to 2012, there were 284 experiences of social cartography or participatory mapping in Brazil. Most of them are linked to the struggle for territorial recognition (42%) and ethno-ecological or environmental management projects (38%). Most of the time, social mapping actors try to affirm identities and territories that are being threatened by major developmental and hegemonic projects.

The methodology applied by social cartography allows the participation and effective involvement of the community in the process of construction of the map (PUSSINI; PIDORODESKI; TOLEDO, 2012). The community itself decides what should be mapped, the symbolic and affective spaces, the way one works and lives in its territory, etc. Social cartography goes beyond the barriers of scientific methodology and inserts community participation in all its stages, so it carries within its structure territorial self-knowledge and community empowerment (ACSELRAD, 2010). As an alternative to traditional cartography, social cartography can be a means of political communication, making use of the graphic representation of maps that result from a political and social development process. Social cartography seeks to give voice and visibility to social movements and groups normally excluded from traditional decision-making processes, it is not different in Fortaleza.

FORTALEZA: THE FIGHT FOR THE PRODUCTION OF A FAIR CITY

Fortaleza is the fifth most populous city of the country, in addition to having the larger demographic density between all the capitals, Fortaleza's metropolitan region is, in fact, one of the most populous of Brazil, and the first in the North and Northeast regions. It is the city with the biggest area of regional influence in the Northeast and has the third larger urban network of Brazil in population, behind only São Paulo and Rio de Janeiro. This population growth began in the 1950s due to the rural exodus. Today, its consequences are remarkable when one third of the population of the state of Ceará is concentrated in its metropolitan region (PEQUENO, 2018).

Since the 1990s, the Metropolitan Region of Fortaleza has expanded through the incorporation of new municipalities, the modernization of road, airport and port infrastructure, the emergence of other industrial axes, tourist coastal urbanization, deployment and production by the real estate. However, analyzing the socio-spatial typologies and the disparities related to housing conditions in the state of Ceará, we can see the clear presence of phenomena of differentiation, segmentation and segregation, which reveals the limited and selective scope of this development process and broaden the fragmentation of the socio-political space fabric (PEQUENO, 2018).

This situation is further aggravated by the high number of removals in the city. According to a study by the UFC's Housing Studies Laboratory (LEHAB), some 26,607 families were threatened or effectively removed between the years 2009 and 2016 in Fortaleza. Most of these removals are triggered by major urbanization projects, and the affected families are either indemnified with an amount up to three times lower than the fair or resettled in housing developments disconnected from the city

and without any consolidated infrastructure (PINHEIRO, 2018). In this context, social cartography is a weapon used against excluding urban planning.

THE INCIPIENT USE OF SOCIAL CARTOGRAPHY IN FORTALEZA

The Presidente Vargas community consists of a neighborhood in which the lands were almost entirely parceled out and sold to their residents by the deceased former owner. The residents, who live there for more than 40 years, did not receive the legal documents of ownership of the land at the time the purchase of the lots was effected. Today they face threats of expulsion from the heirs of the former owner, who want to sell the lots to a private developer for profit. The residents of President Vargas now have possession, but not ownership of their lands, and makes up a case of just possession, that is, has more than 10 years of occupation of the lots. Given this scenario, the Office of the Public Defender seeks to take action in defense of each of the families included in this matter. Through the Project "Defensoria em Movimento", the demand for land regularization of some 400 families in the community was identified. At first, the Public Defender's Office distributed the first letter, necessary to start the process of usocaption, to 95 families. However, more than 150 families showed interest in participating in such a procedure.

The University was sought by the Public Defender's Office to work in the technical stage of the process, the elaboration of the plans together with a descriptive memorial of each dwelling. The UFC Housing Laboratory (LEHAB) indicated the demand to Canto, UFC's Model Architecture Office, and to Taramela, which were organized into two study groups with members of both Canto and Taramela in each: one to research and elaborate a survey model and descriptive memorial adequate to the process of usocaption, and another to study social cartography and collective mapping as a means both of empowering the community and of raising awareness of the judges who would take up this case.

The first study group elaborated a model questionnaire where the architects, together with the residents, must fill with reports and evidence that compose the descriptive memorial of each dwelling, attaching the most diverse documents for this, from fiscal notes to photographs that would enrich the memorial. After this definition, the architectural surveys and the descriptive memorials of each one of the 95 families were made. The final results were then presented both to the residents themselves and to the Office of the Public Defender.

The second group studied a large bibliography on social cartography and collective mapping to better understand the practice. It was defined that the purpose of social cartography in this case would be to generate one or more maps that expressed the history and the affective relations of the neighborhood. The basic principles of social cartography were passed on to the group through practical workshops held jointly with the Department of Geography of UFC. After these trainings, a base map was developed with GIS technology to be presented in the Presidente Vargas neighborhood in a workshop where the group reviewed the basic concepts of cartography and developed two maps,

one of them expressing the temporality of the residents in the neighborhood, the other the important connections built throughout the years. In the second workshop, a relation of exchange was established with the residents, who stated the potentialities and problems they see in the neighborhood. From this conversation, a map legend was extracted and then used for the elaboration of a collaborative map showing these potentialities and problematic. In the third workshop, a map demonstrating interpersonal relationships among residents was made using pins and string. Where the pins demarcated the places where they have affective connections and the strings made the connections between them, thereby showing the network of interrelationships developed in the neighborhood and representing their strength.

In the Verdes Mares community, residents sought help from the Public Defender after receiving a series of threats from City Hall technicians to vacate their homes in exchange of an indemnity value up to four times lower than market value. According to the technicians, the 14-meter wide street in which 92 families live should give space for the extension of a collector road that would be part of a binary street expansion project. The alley at risk is called Beco da Galinha and is part of a bigger community in the Papicu neighborhood, which began to settle there in the mid-1960s, the Verdes Mares community. The first contact was made between the Public Defender and the Housing Laboratory of the UFC (LEHAB), which forwarded the request to Taramela. This demand was then subdivided into two work fronts: the elaboration of the counter project to the proposal of the City Hall, carried out in partnership with the offices Poro Arquitetura e Urbanismo and Grupo Ruma; the survey of the market value of the houses and the elaboration of a social cartography workshop alongside with Canto.

The first working front met to discuss viable alternatives to the binary that did not require the withdrawal of the families of Beco da Galinha. The idea was well celebrated by the residents, but was rejected by the City Hall in a letter sent to the Public Defender. The group reconvened to answer the letter and with the support of the UFC Department of Transportation, the group again requested, in a Public Hearing, that the City Council consider making an alternative proposal.

The second front would act as support in the fight for fair housing, developing the Social Cartography workshop where residents could mark at the base map of Google Earth, previously developed with GIS technology, everything they consider important in and around their territory. It is important to emphasize that the residents insisted on marking all the potential of the region, while they showed fear in pointing out problematic aspects. From this workshop, four maps of the Social Cartography were made: one that shows the Community of Verdes Mares and three that focus on Beco da Galinha, each one made by a different public: men, women and young people; and for that reason, they spontaneously presented different themes. The one made by the men was the one where they mostly pointed out all the problematic of the area; the women's map showed especially where they live, and where their friends and relatives' houses are; and the one developed by the young people focused on all the potentialities of the neighborhood. The four maps, the originals and the ones digitalized with GIS technology, were then attached to the letter sent by the Office of the Public Defender

to the City Hall, with a request to suspend the work of the binary, until an agreement was reached with the Community.

FINAL CONSIDERATIONS

Fortaleza, like the great majority of Brazilian capitals, still performs a deceitful urban planning, reflecting a neoliberal urban management that prioritizes the private real estate market. The lack of dialogue with the population is remarkable, as well as the lack of mitigating measures for the large part of the population that is impacted by government projects. Facing this scenario is that Taramela seeks to act in the construction of a socially fairer city, in partnership with other agents of resistance for the right to the city. One of the tools utilized to best effect this proposal is social cartography, often used in workshops done in partnership with different groups that have the same goal in common.

In Taramela's actions, practices that take the concept of social cartography in a broader way are identified, ranging from the right to stable tenure of land, as well as the right of social participation in urban planning, to the empowerment of people in relation to the territory in which they live. There is still a great difficulty in consolidating this performance as an alternative to more traditional methods, mainly due to the lack of dialogue between the State and the population, which find barriers to organize and strengthen themselves as associations or communities. Without organization, it is difficult to mobilize people for the workshops, and many of the participants do not understand how a map can be used to guarantee their rights, or why they should be the ones to do it in the first place. However, the group does not intend to assume tasks that should be carried out by the State, but it inserts itself in areas of claim and political debate, demonstrating through social cartography the need to effect this social right for all the population.

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São Bené Park: a study of VGI and geodesign as methods for the representation and co-creation of urban territory in Santa Luzia, MG, Brazil

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ABSTRACT

This paper aims to analyze Geodesign (STEINITZ, 2012) as a technopolitical tool for territorial planning, based on a workshop held at the public school Raúl Teixeira da Costa Sobrinho in Santa Luzia, a municipality in the metropolitan region of Belo Horizonte, Minas Gerais, Brazil. The workshop was the product of an undergraduate module of the Architecture and Urbanism's course at IFMG – Instituto Federal de Educação, Ciência e Tecnologia de Minas Gerais –, Campus Santa Luzia, and sought the collective development of proposals for na area known as Mata do Raul, aiming to produce material for the future construction of a public park - *São Bené Park*.

Mata do Raul, although rich in fauna and flora, is degraded environmentally. In 2004, local population started mobilizing itself in favor of the Urban Park, but the movement was soon disorganized. This network was reactivated in 2017, with the beginning of IFMG's extension project *Network of Social Actors for the Implementation of a Public Park in São Benedito*, in partnership with the community, local associations and City Hall. This project has been contributing significantly to the process through Public Calls: meetings with the local community aiming to promote talks, social mobilization and visits to the area. The workshop proposal arises from the linkage between such actions and the Research Project *Rede Participa*, aimed at investigating methods for collective decision with support of digital platforms, through the module: *Codesign and Collaborative Mapping with Support of Digital Technologies*.

This article, therefore, will address both this history of social articulation and the process of collective creation - codesign - of proposals for the park, in addition to the development of the work method. This consisted of an adaptation of Carl Steinitz's Geodesign Framework for the co-creation of alternative futures.

The steps, questions and models of Steinitz's Framework were investigated by the students and adapted to the reality of the place, the public expected, and the technology used. The proposed codesign exercise used the online mapping platform IndAtlas, under development by UFMG's research group Indisciplinar. The experiment with the platform, potentialities and obstacles observed will also be addressed.

KEYWORDS: Codesign; Geodesign; Urban Technopolitics; IndAtlas platform

1. INTRODUCTION

Santa Luzia belongs to the Metropolitan Region of Belo Horizonte, capital of Minas Gerais, with approximately 200 thousand inhabitants. Its territory is subdivided into Upper Sector, Lower Sector, São Benedito District, Simão da Cunha Industrial District and Rural Zone (RIO DAS VELHAS BASIN HYDROGRAPHIC COMMITTEE - VELHAS CBH, 2016). The studied area, known as Mata do Raul, is located in Conjunto Cristina C, São Benedito, extending to the Palmital neighborhood. It is a reminiscent green area, rich in fauna, flora, water courses and springs.

The water courses that have their springs in the area - belonging to the Rio das Velhas Basin and the Ribeirão Poderoso Sub-basin - flow into Ribeirão Poderoso and follow the Rio das Velhas. They are, however, polluted, presenting dark coloration and garbage foam. Besides that, the area's vegetation suffered a significant suppression. Deforestation was due not only to urban sprawl, but also to the creation of informal free spaces such as "trails" made by the villagers, soccer fields and pastures. The presence of irregular garbage discards is also observed. Lack of sewage collection and treatment around the area produces an unhealthy environment, conducive to the development of diseases, putting at risk the health of the residents.

As for land use and occupation, two main types are found in the surroundings: multifamily buildings of 3 to 4 floors and horizontal single family houses. The area is well served by public transportation (although problems may be observed) and by educational institutions, but the predominance of commercial establishments to the detriment of places related to health, leisure and culture is highlighted.

This degradation scenario, parallel to a strong socio-environmental potential, incited the the mobilization for an urban park, popularly named as Parque São Bené. The process began at 2004, with the project *Rediscovering Mata do Raul*, by the state school Raul Teixeira da Costa Sobrinho. A neighbor of the the area, the school promoted actions of awareness and local appreciation, such as planting of seedlings by students, ecological walks, and a "hug" in the woods, then at risk of being transformed into a graphic park (ROCHA, 2018).

In 2017, IFMG integrated the network of agents mobilized by the park, with the extension project *Articulation of Social Actors for the Implementation of Urban Park in São Benedito*. The proposal arised from researches and interviews conducted in the previous project *Memory Space*, focused on the history and formation of the São Benedito District (ROCHA, 2018).

The aim of the extension project is achieving the implantation of the first urban park of the municipality. Besides that, the project proposes to explore socio-cultural issues related to the cultural identity

of the surrounding residents, as well as the concept of belonging - extrapolating the idea of the park as just an urban equipment, but a as a symbolic collective property. It is worth emphasizing that, at socioeconomic levels, the park can favor economic and infrastructural development (ROCHA, 2018).

Partnerships were established with neighborhood associations and non-governmental organizations, such as AIAASCA - Art.22, active in socio-cultural and environmental initiatives. The Public Ministry and the City Hall showed interest in the proposal, and the latter became responsible for inserting the bill into the city council (ROCHA, 2018). The extension project has been contributing significantly to research and social mobilization through Public Calls, which have taken place since 2017. These calls consist of meetings between academic community, surrounding population, municipal entities and associations, through talks, exposition of pertinent subjects, discussion of current legislation and visits to the area, with the purpose of advancing in the process of conquering the park.

2. LITERATURE REVIEW

The production of maps, or cartography, may have its use historically associated with the representation and legitimation of power and knowledge relations. Access to the techniques and tools for their making, and even the skills necessary for their interpretation, were usually restricted to dominant sectors of society - leading to the construction of successive world images shaped by the interests of specific social groups (SÁ, 2018, p. 405).

However, new cartographic approaches have emerged, driven mainly by the discussion of citizen participation, associated with the advance of digital communication technologies - with gradual reduction of the gap between the ordinary citizen and spatial visualization tools, through platforms like Google Maps, Waze, Uber etc. In this way, an activity that was once restricted to specialists, becomes increasingly palpable for those with no previous training.

Contribute to such practices phenomena as crowdsourcing, the collection of online data from multiple users; the use of VGI: Volunteer Geographic Information – that is, geographic data produced online by people, and supplied voluntarily –; and the advancement of what has been identified as Citizen Science: the production of scientific information from knowledge of communities or citizens' networks (GOODCHILD, 2007).

Some authors define this association between cartography and collaborative practices of collective production and decision making with terms such as "new social cartography" and "participatory cartography". The participative dimension of map production has gained space in experiences of social struggle and in the constitution of collective actors. Such cartographies are distinguished from traditional practices by giving visibility to aspects of reality that are not valued in hegemonic spatial representations (SANTOS, 2012).

Hence, one can see the production of collective cartography as a technopolitical practice – a term

used to characterize the use of digital devices and technologies in the search for social and political transformation, popularized in 2011 with the Spanish revolts of 15M, when it was described as:

> The tactical and strategic use of digital tools for organization and communication, with collective action as a key concept. From the network-system perspective, technopolitics can be redescribed as the ability of connected multitudes, of networked bodies and brains to create and automate joint action. Technopolitics can embrace cyber-activism as it is confined to the digital sphere. Undoubtedly, in its full sense, technopolitics is the collective ability to use the network to invent ways of acting that can start from the digital universe, without, however, being exhausted in it (TORET; @DATANALYSIS 15M, 2015, free translation).

The activity proposed in this codesign workshop is understood, therefore, as a technopolitical exercise, whose purpose extrapolates the design result itself, as it seeks to: strengthen ties between participants and the place where they live; promote discussion on citizen participation, urban public policies and on ways to achieve them; as well as to provide training in digital spatial representation tools and collective negotiation methods.

From the technical and methodological point of view, as will be approached next, the workshop used the online platform IndAtlas, and an adaptation of the Geodesign Framework developed by Carl Steintiz (2012).

3. METHODOLOGY

Steinitz (2012) formulated a Geodesign Framework (Figure 6), in which six questions should be asked (explicitly or implicitly) by the working group at least three times during the process – each round of questions corresponds to an iteration. The purpose of the first iteration is to obtain more information about the study area and its population. The questions are asked in the order of 1 to 6, with the purpose of answering WHY to conduct the geodesign. In this phase, all the models that can be constructed are briefly imagined, but their effective elaboration takes place in the next stages.

In the second iteration, the methods of the geodesign are defined. The questions are then asked in reverse order, from 6 to 1, seeking to define HOW to conduct it. At that moment, the relevant variables are defined and the models of *representation*, *process* and *evaluation* – which gather basic data about the description and operation of the area – are constructed.

In the third iteration, corresponding to the execution of the geodesign, the questions are asked once more in order from 1 to 6, pursuing to answer WHAT to propose WHERE and WHEN – consisting

in the elaboration of proposals, negotiation and collective decision making, through the models of *change*, *impact* and *decision*.

The background for proposal design are systems defined by the technical team – in this case, students of the module – in the second iteration. It was decided, therefore, to work with: *environment*; *urban cleaning and waste treatment*; *safety*; *mobility*; *culture and leisure*; *housing* and *commerce/service*. This definition took into account the diagnoses elaborated previously by the extension project and was presented and validated by the community in the public call of 10/17/2018. Each system becomes a base map, therefore, about which workshop participants will draw up proposals.

Traditionally, the base of the systems are the evaluation models: maps elaborated by the technical team in the second iteration that indicate, through the semaphore scale, areas with less or greater potential to receive proposals in each theme. It was decided, however, not to use them in this way. Such a choice was based on the premise that they could induce proposal design to be focused in specific areas – a fact already observed in some previous experiences –, instead of encouraging the participants to create from their own experiences in the territory.

Thus, it was preferred to provide thematic maps with technical variables for each system – that is, in the format of the process models – but without hierarchizing the territory in spots more or less propitious for proposals. The main indicators used were: vegetal cover, public transport lines, land use, risk areas and water courses. The bases were separated as layers and uploaded to IndAtlas, so that they could be viewed separately and receive the first round of proposals, that is: construction of the *change* models.

The next step after the first set of designs is the *impact* model. Often, in geodesign workshops, it is the result of an automated impact assessment matrix, programmed to indicate negative or positive repercussion of the overlap of the proposals drawn in each system (it is up to the technical team to define, in the second iteration, which systems would impact well or poorly the others, in each case study). This matrix, however, was not used because of its complexity, and also because of the risk of becoming reductionist, since it evaluates the impacts of one system on the other, and not of each set of proposals separately, which can generate quite different results. It was therefore decided to build the impact model as a qualitative evaluation of the participants on the proposals created in the change model, discussing each case individually. After this step, the negotiation stage begins, when the participants debate, defend or criticize the presented ideas and negotiate changes, arriving at the final codesign, corresponding to the *decision* model.

The online platform IndAtlas used proposes to gather in a single tool the possibility of investigating spatial, temporal and social phenomena, in a collaborative way. It is composed of three main axes: "1) territorial - maps; 2) temporal - timelines; 3) social - network topologies (graphs) "(SÁ, et al., 2018). However, at the time, maps were used as a priority, as there was not enough data available for the timelines and graphs.
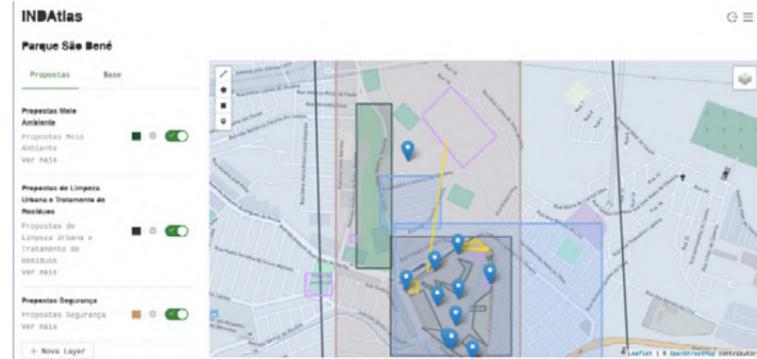
Figure 8: IndAtlas Platform. Source: Grupo Indisciplinar, 2018.

Figure 1: Picture of the workshop. Source: Own collection, 2018.

4. RESULTS

The workshop took place on two school Saturdays at the State School Raul Teixeira da Costa Sobrinho, 11/17/2018 and 11/24/2018. Its first stage consisted in a basic introduction to digital mapping tools, discussions on the area, and initial designs. Ten people participated, including seven students from the technical business administration course, one high school student and two teachers - IFMG architecture students acted as mediators.

Initially, a familiarization process with digital mapping platforms was conducted, using Google Maps, showing the present how to navigate and locate themselves in an online visualization, besides exploring notions of scale. After this, the tools and functionalities of IndAtlas were explained. Following, a discussion about Mata do Raul and its surroundings was held. The main aspects mentioned were: reduction of green areas; disorganized proliferation of building complexes; lack of leisure and culture (especially for the elderly); poor mobility conditions (especially for walking mobility); increasing environmental degradation; loss of springs and safety problems.

The class was then divided into five pairs. Each pair should design one proposal by theme (system), on the respective system layer in IndAtlas.

The pairs were then instructed to study the proposals made by the others and received a voting table to indicate whether they approved them or not, even though there was no discussion yet – at which point the first meeting ended. The most voted proposals related to trade and services, public security, and housing.

The second day of the Workshop was attended by six participants and consisted in discussing the results of the first meeting in order to adjust, edit or delete the proposals that had not reached consensus, resulting in the elaboration of the final codesign.

Initially, an overview of the preliminary ideas was carried out. For this, the proposals contained in IndAtlas were systematized and summarized in tables, images and short texts. Thus, all the proposals were gathered in one screen in the room, for collective evaluation.

SISTEMAS	GRUPO						LEGENDA
	I	II	III	IV	IV		
MEIO AMBIENTE	3	2	3	2	3		PROPOSTAS QUE ATINGIRAM CONSENSO
LIMPEZA URBANA E TRATAMENTO DE RESÍDUOS	4	5	2	2	4		PROPOSTAS QUE ATINGIRAM MAIORIA DOS VOTOS
SEGURANÇA	2	5	3	4	3		PROPOSTAS QUE RECEBERAM DOIS VOTOS
MOBILIDADE	4	2	-	4	3		PROPOSTAS QUE SÓ FORAM APROVADAS PELO PRÓPRIO GRUPO PROPONENTE
CULTURA E LAZER	4	3	4	4	4		GRUPO NÃO APRESENTOU PROPOSTA PARA O TEMA
HABITAÇÃO	2	4	2	1	5		
COMÉRCIO E SERVIÇOS	5	3	-	2	4		

Figure 2: table with voting results for the first round of proposals. Source: Own elaboration, 2018.

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Afterwards, the first phase of discussions took place, which consisted of negotiating non consensual proposals and / or those which needed adjustments, such as proposal overlaps in the same location – in some cases, overlap is not a problem when a proposal of more general policy (eg improvement of public lighting) overlaps with one-off equipment (eg guardhouse). However, it was necessary to reassess cases where there were conflicting equipment proposals in the same place (eg, garden overlapping pathway). In addition, there were very similar or complementary proposals that could be grouped together, as well as very generic ideas that could be reformulated to contain more specific guidelines focused on the area. There were also proposals outside the theme in which they were inserted, such as "garbage collection to improve quality of life", proposed in the housing system, rather than in the urban cleaning.

After this first discussion and proposed adjustments, participants were redevised into two thematic groups: A: environment; urban cleaning, waste treatment and security; B: mobility; culture and leisure; trade and services and housing;

From the aspects discussed, the participants redesigned the propositions, adapting, excluding or adding diagrams in the online platform. After this stage, there was the last negotiation round, in which the new proposals were presented to all participants, who voted for or against each idea, generating the definition of the final codesign.

5. DISCUSSION AND CONCLUSIONS

The geodesign method was shown efficient for the collective creation and discussion of ideas for Mata do Raul. It was assessed, also, that the proposed adaptations of the Framework for the workshop were positive. For example, the option of not using the evaluation maps did not inhibit the production of designs and evidenced the ability of the residents to present ideas from their own perspective on the community. The impact assessment conducted from a freer discussion, without the use of a quantitative matrix was also satisfactory, in view of the specific objective of the workshop to build a set of proposals still in preliminary character for later maturation. It is believed, however, that such resource can be valuable in more technical studies or for more advanced stages of project implementation.

The visualization of maps, layers and polygons in IndAtlas allowed good understanding of the majority of participants and enabled the process of design and modification of proposals to happen in an agile and intuitive way. It was observed that the initial exercise of familiarization with online maps contributed largely to the fluidity of the later stages, since difficulties identified in that first moment did not appear again.

Regarding the groups' composition, it was concluded that among alternatives tested, it was better to divide the members by themes. In the first stage of the workshop, when the groups made proposals

for all systems, very similar or complementary proposals were made, and the adjustments of those results consumed a considerable part of the negotiation stage.

It should be emphasized that the set of proposals prepared collectively in the workshop should not be considered a final project, but rather a collection of preliminary ideas from a community group, with the aim of nourishing further debate and activities. However, it is believed that the process produced important insight on the desires of the group for the site and helped changing participants' views of the surroundings. In this way, a contribution is made to local dwellers' sense of belonging, as well as to the acknowledgement of the importance of the area preservation and of the mobilization of local actors. It is proposed, as a continuation of the research, to present the results of the workshop to the Extension Project team and the local community, and to follow up to what extent, and in what way, it contributes to the evolution of the park project. In this way, it is intended to advance in the understanding of the geodesign role within broader participatory processes.

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The Map as a technopolitical tool and its role in the cartographic method of the Indisciplinar Group between 2012 and 2018

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ABSTRACT

This paper proposes to investigate the role of maps as technopolytical devices (TORET, 2013) in the urban research projects developed by UFMG's – Federal University of Minas Gerais – Indisciplinar research group, between 2012 and 2018. Several projects will be addressed for which the development of collective mappings, through digital interfaces or not, played a fundamental role as devices of territorial interpretation and transformation, as well as for the articulation of social actors. It will also be examined how the conduct of such processes led to a research method that connects the territorial, temporal, social and communicational dimensions of the investigated phenomena (RENA *et al*., 2016), culminating, finally, in the production of the digital platform IndAtlas (SÁ *et al*., 2018), currently in development by Indisciplinar.

Indisciplinar is a multidisciplinary research group whose actions are focused on the investigation of contemporary space production, working together with various actors involved in urban dynamics, such as: social movements, other research and extension groups, members of organized civil society , public power etc. The aim is to demonstrate how the production of collective cartographies in its projects had an impact both for their academic results – contributing to the maturation of the group and its method of work –, as well as for the articulation of social actors entangled in the mentioned processes and the activation of new territorial dynamics

The article will be divided into two parts. The first one, with a more conceptual approach, will address the historical relationship between cartographic representation, territorial production and exercise of power. It is understood that the knowledge involved in elaborating and reading cartographic information was a resource intensely explored by dominant sectors at different times, leading to the construction of successive world images consonant with their interests (SÁ *in* RENA *et al*., 2018, p.405). However, new possibilities open up in the contemporary world, with the emergence of concepts and practices such as *cartographic activism* (SANTOS, 2011), or *cartography in an extended field* (SPERLING, 2016). The advance and widespread dissemination of digital communication technologies contributes to the complexity of this controversy field (LATOUR, 2005), with an immense volume of spatial data being produced, accessed and shared by networked citizens, as well as feeding the production of easy-to-understand visualizations and manipulation by communities previously excluded from the cartographic language domain. While on the one hand such transformations have fostered intense

debate about their democratizing potential, on the other hand there is also growing concern about the increasingly pervasive state and corporate surveillance mechanisms that can be supplied through the same technologies and databases (SÁ, *op. cit.,* pp. 10-11).

The second part of the article will be devoted to analyzing the importance and role of maps as a technopolitical tool in Indisciplinar's projects, be they physical or online mappings.

KEYWORDS: Technopolitics; Cartography; IndAtlas Platform; Group Indisciplinar

CARTOGRAPHIES, TECHNOPOLITICS, GEOPOLITICS

Cartography as a concept has always played a fundamental role in Indisciplinar's production, both from a theoretical/philosophical point of view – from Deleuze and Guattari, cartography being one of the central principles to the concept of Rhizome, (DELEUZE; GUATTARI, 1995), understanding it "not only as a method of classical territorial geography, but as a daily micropolitical tactic composed of political action; insurgent, dynamic, always procedural and creative"(RENA et. al, 2015, p. 15) –; and for its traditional notion of territorial representation (map production), since this is one of the main resources explored in Indisciplinar's projects and actions. Both meanings are confused and constantly crossed in the production of the group, guiding our way of acting and relating to the subjects investigated: understanding ourselves not as external observers, but as one more networked actor, that affects the phenomena mapped, and is affected by them. At this point, however, we propose to shift the focus of the discussion from cartography as a philosophical concept, to place it on its controversial role as a tool for visualization and territorial representation.

Historically, cartography has played a central role in legitimizing and materializing relationships of knowledge and power, giving visibility or deliberately hiding strategic information, and helping to consolidate successive worldviews consonant with the interests of hegemonic groups (SÁ, 2018, p. 405). It is, therefore, an essential device for the geopolitical organization which, by setting up a technical language, dependent on specific knowledge, has remained for a long time accessible only to restricted groups.

An example of this is the importance of cartography for Portugal at the time of the great navigations, even resulting in espionage and bribery actions from people in search of access to geographic information. At the time of mine exploitation in colonial Brazil, areas where the Crown did not wish to occupy were intentionally suppressed from their maps to keep their location unknown (MORAES, 2005, pp. 66-109).

More recent initiatives, however, seek to expand reach and democratize access to cartographic practices and tools, subverting their traditional role and implementing counter-hegemonic processes: i.e. with minority groups, or in peripheral territories.

SANTOS (2012), points out some of the terms used to define these new practices, such as *new social cartographies*; *cartographies of action*, *counter mappings*, among others. They are characterized by the valorization of aspects made invisible by hegemonic spatial representation, by using collective production, by participatory dynamics, and by the break with cartographic conventions – resulting in the invention of new forms of territorial representation (idem, p.1):

> The tension of the power relations they bring us appears in three central spheres: in the process of cartographic production, in which actors (social movements, public managers, cartographers, etc.) dispute the participation in elaborating the instruments of cartographic representation; in the cartographic object itself, in which one contests what is mapped and how it is mapped; in the use of cartography, which increasingly appears as an instrument of disadvantaged groups. (ibid., p. 2)

The advance of digital communication technologies, coupled with new tools of visualization and simulation of spatial information – GIS –, has been contributing increasingly to disseminating these practices. Therefore, the distance between the ordinary citizen and the production and visualization of territorial information is reduced, from the daily use of platforms and applications such as Googlemaps, Open Street Maps, Waze, Uber etc. The spread of mobile devices connected to the Internet, such as smartphones and tablets, is another important factor for such process, mainly because of their mobility, enabling such technologies to be accessed and used in an associated way, or as mediators of the urban experience (SÁ, op. cit., p.406). Some authors even speak of the emergence of a *spatially capable citizen*: who would be able to "express himself, formalize, equip (technologically or cognitively) and, of course, activate and efficiently use – consciously or not – his spatial abilities" (ROCHE apud BORGES; ZYNGIER, 2015, p.89).

In this sense, the new cartographic dynamics mentioned can be seen as technopolitical practices (TORET, 2015), understood as the association between networks and collective action for political and social transformation:

> The tactical and strategic use of digital tools for organization and communication, with collective action as a key concept. From the network-system perspective, technopolitics can be redescribed as the ability of connected multitudes, brains, and networked bodies to create and automate joint action. Technopolitics can embrace cyber-activism as it is confined to the digital sphere. Undoubtedly, in its full sense, technopolitics is the collective ability to use the network to invent ways of acting that can start from the digital universe, without, however, being exhausted in it (TORET; @DATANALYSIS 15M, 2015, sp trad.livre).

It is not without controversy, however, that such technological advances cross the territorial realm, opening space for new approaches of spatial representation, for an enlargement of who cartographs what and how. On the one hand, these new technologies do aid by infiltrating everyday life with geographical representation, by expanding the ability to interpret and read spatial visualizations, and by supporting collective and collaborative exercises for producing territorial knowledge. On the other hand, most of the most heavily used platforms are proprietary, and increasingly centralized in the hands of technology giants (Google, Facebook, Amazon etc.).

Avalanches of spatial data produced by the daily use of such tools are concentrated by these few companies, providing them with strategic territorial databases on the functioning and use of urban spaces, to which public power and inhabitants of the cities do not have access. In this way, the former geopolitical role of cartographic production as an instrument of domination and exerting power is rescued – which generally is paradoxically made feasible by the same tools that propose to expand and democratize access to the geographic information and representation of the territory.

Indisciplinar's cartographic production, therefore, is inserted precisely in this intricate field of disputes. Although aware of the contradictions present, but also of cartography's power to make visible the phenomena and social groups investigated – as a tool of representation, collective imagination and territorial proposition –, we sought to structure a set of guidelines for the cartographic method of the group. At that moment, the understanding of cartography as a philosophical concept is rescued to articulate the reflection on our way of acting and working, which also guides the territorial cartography. We add here the investigation of Bruno Latour's Actor Network Theory – ANT (2005), as another theoretical presupposition fundamental to our production, as we see in the cartography of the controversies a central aspect of this method of investigation:

1. To make–know–transform, cartographing reality and building new worlds;

2. To activate micro policies in a trans-scalar mode;

3. To constitute a process of political/academic research that does not separate theory from practice;

4. To use technopolitics devices that are both deconstructive and constituent, tactical and strategic;

5. To build research–intervention processes from experience in struggles;

6. Unlike the traditional scientific method – Meta-Hodos – that is a way of proceeding to fulfill objectives, the cartography is a Hodos-Meta: it has its own path (process) as the main objective;

7. It is an investigation that is constructed by imbricating subject and object in the processes;

8. To act in the blind spots of the struggles, studying and translating in a synthetic way, the laws and official documents, for example;

9. To potentialize ubiquity using technopolitics (networks and streets);

10. To act in the real time of the struggles, with an open agenda, flexible and variable;

11. To work from bets rather than from scientific hypotheses;

12. To create an appropriate research environment for the academic performance of social movements/actors;

13. To act as parts of networks, with multiple actors (not as technical advisors).

We propose, next, to analyze this mapping from some projects and actions of Indisciplinar between the years of 2012 and 2018.

INDISCIPLINAR'S CARTOGRAPHIES 2012-2018
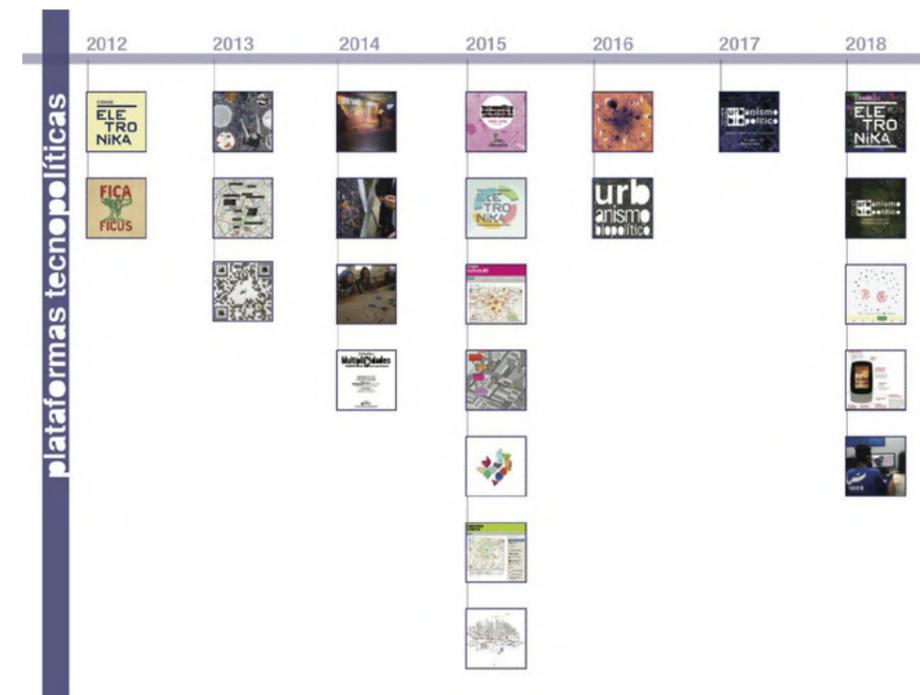

Figure 1 – Indisciplinar's technopolitic actions' timeline. Source: Indisciplinar, 2019

The relationship between Indisciplinar's production, cartography and technopolitics has taken place since its foundation in 2012, with the event *Urban Activism* – Cidade Eletronika –, which brought together Ibero-American researchers, architects and activists in seminars and workshops about the

central region of Belo Horizonte, focusing on the event *Duelo de Mc's* (Mc's Duel). Duelo is a MC's competition that takes place below Santa Tereza viaduct (a historical landmark of the city), and is considered one of the first cultural movements to occupy the city center in an insurgent manner, with a continuous agenda, a large audience and participants from all over the Metropolitan Region of Belo Horizonte.

Atlas da Diversidade was a product of this workshop, in collaboration with the Real da Rua collective, and coordinated by the Colombian architect Antonio Yemail. The Atlas generated the fanzine *O que acontece aqui* 'what happens here', written by architecture students, artists and cultural movements linked to the Duelo. In addition to a cartography of the territory and of space practices promoted by the Duel, the fanzine brought the project of itinerant urban equipments for place appropriation – such as mobile skateboard obstacles, bleachers and modules with speakers for musical presentations, among others.
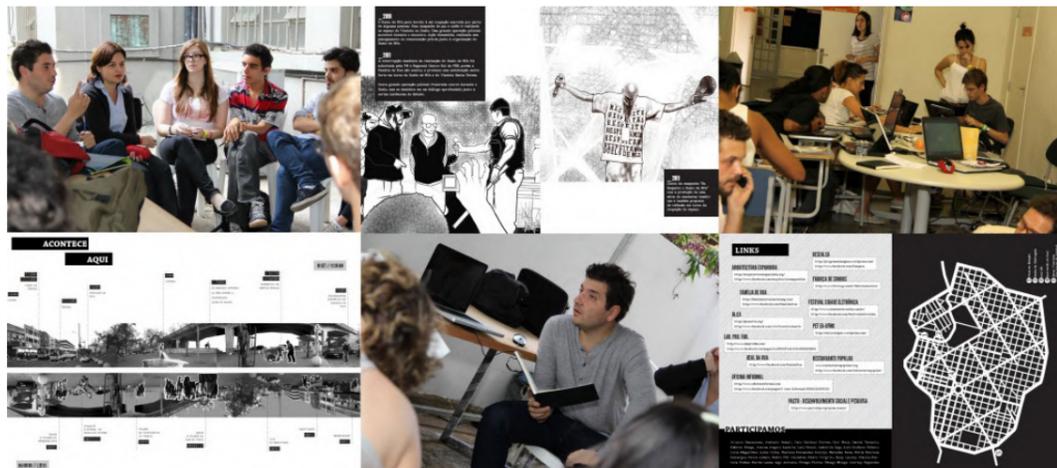

Figure 2 – Atlas da Diversidade workshop and fanzine. Source: Indisciplinar, 2019

This process of mapping territorial disputes in Belo Horizonte expanded, still focusing on cultural production, giving rise to the seminar "Right to the city: what we have in common", part of the program of the VAC – Verão Arte Contemporânea – annual festival. The seminar brought together artists, urban activists and researchers to discuss new ways of occupying the city, having the presence of several groups and movements that would later configure key cultural actors of the June 2013 Journeys, such as *Praia da Estação*, Street Carnival groups and the Duelo de Mc's itself.

Just when the Journeys started, Indisciplinar promoted the first version of the undergraduate module *Cartografias Emergentes*, at UFMG's Architecture course, which deepened the process of mapping movements and social groups that acted in the insurgent occupation of central Belo Horizonte. At

this point, however, the group starts a search for investigating broader issues that go beyond local territorial struggles, covering large urban projects with regional and macro-regional scales.

An example of this was the *Operação Urbana Nova BH* (OUC Nova BH): an urban planning instrument that proposed a considerable expansion of the construction potential allowed by law in determined areas, in exchange for the purchase of Certificates from the municipal government (CEPACS - Additional Building Potential Certificates) – a mechanism with great gentrification potential for the mapped areas.

From this moment, the cartography carried out by the group starts a process of not only working in the microsphere, together with the multitudinous networks of struggle, but also trying to produce knowledge that is capable of relating the local performance with trans scalar analysis, helping resistances with information able to unfold the blind spot of the struggles: complex data on large urban projects and decisions in an enlarged sphere, which are often disregarded by groups operating at the microscale. This shift has brought the need to advance in collaborative cartography, bringing the group to bet in collective production of information, to be systematized and made visible via infographics, diagrams and graphs.

After this initial moment, Indisciplinar's cartographic activity can be summarized in a chronology of events, allying peaks of cartographic production to network and partnership's formation. We highlight here some of these actions that had relevance for \ the development of the cartographic method of the group:

(i)   In February 2014, the cultural and academic event Cartografias Biopotentes, took place as part of the VAC festival / 2014: a series of workshops and seminars aimed at investigating ways of critically mapping the city and its territorial biopolitical dynamics. Were included in the event the *Mapping the Commons* Workshop, in partnership with Spanish researcher Pablo de Soto: a digital collective cartography focused on the target area of OUC Nova BH; the *Entre Muros* workshop, in the Santa Tereza neighborhood – a neighborhood of great importance for historical and cultural heritage, but also a focus of intense real estate speculation and gentrification processes; the *Vila Dias Affective Cartography*, aimed at a community in situation of great social vulnerability and imminent risk of expulsion for the execution of large urban projects; and finally the *Fazer-Trabalhar* workshop, with participation of Colombian digital artist and activist Gabriel Zea, which also produced a collaborative online map, with the territorial cut of the Santa Tereza Viaduct surroundings.

(ii)   As an outcome of VAC 2014 started the research project *Cartografias Emergentes* – The territorial distribution of cultural production in Belo Horizonte. Over the course of a year, several cartographic actions were produced in Belo Horizonte, seeking to cover both formal and institutionalized cultural activities and spaces, as well as emerging and peripheral cultural production, usually invisible by the hegemonic conception of Culture. The project involved two editions of the undergraduate module UNI 009 (first and second semesters of 2014), involving

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students, social movements, cultural collectives and local associations in the production of cartography. Its products were a technical report and the collaborative online map Mapa-CulturaBH,[1] hosted on the platform Crowdmap - Ushahidi. The production of this map was of great importance to advance further in the research on digital mapping platforms, and to begin to outline guidelines for the development of the group's own platform – IndAtlas, currently under development – based on the challenges and limitations encountered in available technology.

(iii)   Between July and August 2014, the *Cartografias do Comum* show in was held the UFMG Knowledge Space: an exhibition associated with debates, workshops, film screenings and seminars. The event was organized with horizontal participation of groups, collectives and social movements from Belo Horizonte that research and act in the construction of the common. *Cartografias do Comum* happened at a time when Brazil was hosting the Soccer World Cup, providing a space for critical reflection on the processes of territorial transformation leveraged by this type of great event. At that moment, the collaborative cartographic exercise (from the point of view of geographic representation) returns from the digital to the physical support, since the central point of the exhibition space was a large map of BH plotted on the floor and associated with a timeline, in the which visitors could intervene, mapping places and events that they considered pertinent to the proposed reflection.

(iv)

Figure 3 – Cartografias do Comum exhibition space. Source: Indisciplinar, 2019

(v)   Still in 2015, two projects involving collaborative digital cartography were of importance for advancing Indisciplinar's research. *Em Breve Aqui* – a digital mapping of urban voids in the central region of Belo Horizonte –, and *Natureza Urbana* – a mapping of aspects related to green areas or of environmental interest throughout the city. In *Em Breve Aqui*, the mapping process was done from a network of undergraduate courses in different architecture schools of Belo Horizonte (UFMG, Izabela Hendrix, etc.), associating the mapping of urban voids with project exercise proposals, constituting a cartography of urban ideas and possibilities. The cartographic exercise of *Natureza Urbana* was fed by the articulation of several actors related to the environmental struggles in the city, such as the movements *Fica Ficus*, *Parque Jardim América*, *Salve a Mata do Planalto*. *Natureza Urbana* unfolded in the event organized for the VAC 2016 festival, which consisted of a seminar and field visits to urban occupations close to areas of environmental interest, aiming to discuss the articulation between the struggles for housing and nature.

Beginning in 2017, the main efforts of the technopolitical production of Indisciplinar are focused on methodological research and tooling, to consolidate the working method, with the proposal of the guidelines mentioned, and to create an online platform of its own – IndAtlas – able to contemplate the main axes of analysis explored by the group. IndAtlas is, therefore, configured from the articulation between collaborative maps, production of time lines and graphs of networks of actors, connecting, then, data that we formerly analyzed in scattered platforms.
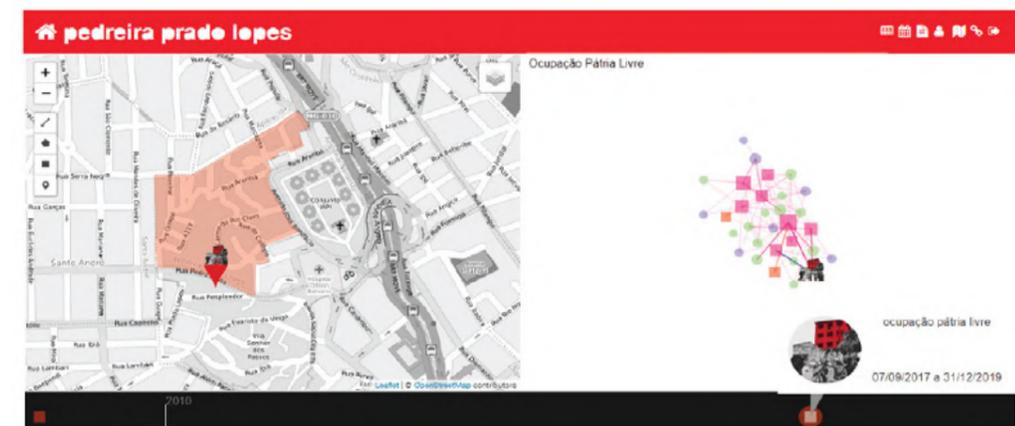
Figure 4 – IndAtlas' interface. Source: Indisciplinar, 2019

Currently in the BETA version, IndAtlas is being submitted to the initial tests based on the research project Territorios Populares, coordinated by the LabCidade of FAU-USP and carried out in a network with groups from different parts of Brazil, among them INDISCIPLINAR. The projects purpose is to deepen the understanding of the forms of socio-territorial inequality engendered by processes of

spatial restructuring associated with the interests of capital that, as a rule, provoke the expulsion of the poor population; changing their way of life and their forms of survival. In our case, we intend to map and make visible the controversies regarding the production of the space of the popular territories of central Belo Horizonte.

4. FINAL REMARKS

As we observe a clear evolution of Indisciplinar's cartographic production, we also recognize the necessity of deepening our investigations focusing on the trans scalar and geopolitical processes involving not only the territorial phenomena investigated, but the cartographic technopolitic production on its own. That is, to understand cartography not just as a means of working with the territorial struggles, but as a fundamental dispute field itself. We understand that the control of information, and of the tools and processes used for data production and analysis, as well as their territorial unfoldings, should be among the main political concerns of our times.

In this sense, methodological development seems as important to us in Indisciplinar, at this point, as technological advance.

As an agenda for our further steps, we suggest developing specific guidelines for conducting the work with technopolitical tools and networks, taking into consideration the issues such: discussing visibility and vigilancy problems with the social movements and groups that work with us; stablishing platforms and web applications that can or cannot be used in each circumstance and for each purpose; defining protocols for sharing data and results of the research produced etc.

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A Proposition for Bottom-up Local Community Participation through Digital Mapping

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ABSTRACT

Europeanisation and European urbanistic standards (urban sustainability) have been present in Croatia, as the youngest member, for only a few years, and more declaratively than in practice. Urban renewal, revitalization of cities' centers and gentrification are therefore intensive processes, primarily economic in nature (with an increased real-estate value), and mostly beneficial for urban policy makers and holders of economic power (investors). Such renewal is often very partial and inconsiderate towards the quality of urban living for citizens, who are mostly excluded from participation without a possibility to influence the future appearance and purpose of space. This is also particularly problematic in peripheral city parts, smaller local communities or neighborhoods, in which residents' everyday needs are inadequately met. Inadequate infrastructural equipment or reduced public or green areas threaten the basic citizens' right to well-being. It is therefore possible to strengthen urbanity, as a fundamental measure of a more or less achieved urban living, only through citizens' greater influence in a bottom-up participation process. Models of bottom-up urban public space design strategies should be adjusted to enter directly into the community and strive towards assisting its residents in making their space more acceptable on everyday level. In the Croatian spatial system, participation is weak, because commercialization and privatization are at the forefront of directing post-socialist countries' urban development. In this context, the value of public spaces and interests is often destroyed. Examples of civic laboratories as possible models of local community action through applying digital technology would therefore be useful and could serve as examples of good bottom-up practice. Given the massive presence of the Internet and social networks, the main idea is to involve citizens in digital platforms and to design, with urban sociologists' and architects' assistance, preliminary research of the situation in every particular neighborhood. The results would be presented, with citizens' consent, to urban policy and administration representatives to facilitate collaboration. On-line networking of residents and then on-line questionnaires or interviews would initiate the next inevitable phase of bringing residents closer. Such collaboration would motivate residents, but also make city authorities aware of the need to 'leave the office' and respond more openly to citizens' demands, e.g. for improved waste removal and sorting, built or repaired parks and playgrounds, expanded green areas, increased citizens' traffic safety, etc. Such digital mapping of community and citizens' principal needs would mean an attempt to improve participation and extend its duration through phases (problem detection, collaboration and implementation). The institutional

city authorities' to-date ambivalence towards citizens can indeed be challenged more easily through digital technology because it implies the possibility of greater democratization. This is why it is important and long-term useful to develop models of civic laboratories, as fundamental participation models, upon which the future appearance and development of cities will depend.

KEYWORDS: bottom-up participation model, on-line networking of residents model, community (neighborhood), Croatia

1.INTRODUCTION

The involvement of post-socialist countries, and therefore Croatia, in the broader European and global processes, beginning with their independence in the 1990s, was primarily political and economic. It resulted in a long-standing transition and adaptation lasting until the present day. The shift towards market economy and democracy and relying on the privatization of assets and ownership enabled private interests to take up a very important role (Stanilov, 2007; Tsenkova, 2009). This has led to the reduction of the role of public interests, and the system became centralized (former local communes[1] lost their previous competences) with the involvement of citizens becoming declarative and formal, and without greater influence. This was contributed to by the reduced role and responsibility of the state, with a significantly increased role of a smaller number of so-called private actors (owners, investors and developers), mostly economic and political ones. The governance of space (urban and rural) was taking place throughout the whole period of transition in most transition countries, as well as Croatia, in an almost identical way, which can be viewed as privatization, partial and uncontrolled. This way of spatial privatism is very intensive and is part of the broader East European context, which is described as "[East European privatism is like] Western privatism on steroids" (Hirt, 2012, p. 27), especially after the 2000s. Urban space in this sense is often left to solutions adjusted mostly to short-term interests. Attractive locations therefore experience over-building of housing or business premises, which is a process that will lead rapidly and effectively to the change of the appearance and identity of the city and the related economic profit. The consequences can be seen immediately on the level of public interests, which have been disregarded or reduced for long. At the local level, in new and most often peripheral locations there is inadequate and reduced primary equipment regarding public facilities and institutions. The lack of public spaces, playgrounds, parks, green areas, public transport, kindergartens, schools, etc. is visible because intensive housing building is not accompanied with enough related infrastructure and public services. This is especially evident on the level of capitals, e.g. Zagreb (Svirčić Gotovac & Zlatar, 2015). In the transition period

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[1] Former local communes from the period of socialism were replaced in the new system by local committees that have reduced competences and represent the public voice via their representative in the City Council. Public needs are then met on the City level, depending on their urgency and the means available, which is a process that can last a few years.

these cities have experienced demographic growth and have spilled over their edges due to deindustrialization and suburbanization. In the Zagreb city center the socio-spatial phenomena of economic nature can also be observed, such as gentrification and short-term revitalization, which have further strengthened the inflow of tourists, private cars and building of garages (touristification, automobilization, garagization). These changes have led to the reduced influence of civic actors (citizens), which found themselves in a somewhat undefined position. Their unsatisfactory involvement and participation is evident, as well as their insufficient cooperation in the decision making process and urban policy. Although Croatia, as an EU member, has access to new European urbanistic standards (urban sustainability), the very decision-making process itself does not exhibit advancement towards more active participation and more open cooperation with the citizens. The Croatian urban policy is therefore more inclined towards the old paradigm based on the principle of top-down decision making, not offering enough sustainable solutions (good practices).

The examples of European cities' good practice are not enough accepted and applied in Croatian cities and overall space. Croatian cities are not particularly eager in applying for the existing awards of EU sustainable cities, e.g. European Green Capital Award and European Green Leaf Award, contrary to the Western cities. The cities that have been awarded the title of sustainable or green European city[2] can be considered model-cities of a kind, not only on the EU level, but on the global one, and serve as examples of how truly radical changes can be achieved in improving the quality of citizens' life, which most contemporary cities lack. The changes are primarily evident in the increase of or greater care for public spaces, the enlargement of pedestrian zones and the reduction of car traffic. However, public spaces are often threatened and destructed in most contemporary metropoles, which are characterized by the globalization processes and economic interests, among which post-socialist metropoles are not an exception. "However, the global neoliberal trend posed a major challenge to public goods everywhere, as partly evident in threats facing public space, which has resulted from the restless process of globalization" (Madanipour, 2010, p. 5). In order to reduce the influence of 'traditional' consequences of urbanization, from pollution and traffic congestion, densification, over-building, urban sprawl, and public space reduction, every effort towards the change of the developmental direction towards urban sustainability is welcome.

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2   The examples of Ljubljana and Lisbon are outstanding. Ljubljana won the European Green Capital Award in 2016 and became the first post-socialist city that managed to receive the title. By this achievement it was intended to accomplish the improvement of citizens' life quality on the long term and improve the city image and identity in the cultural, tourist and economic sense. More: http://ec.europa.eu/environment/europeangreencapital/winning-cities/2016-ljubljana/.
Lisbon is the European Green Capital for 2020. Lisbon "is working towards a fully integrated city, employing a holistic approach to urban planning that considers all aspects of the city, including water, mobility, waste, as well as education and employment. The city involves a wide range of stakeholders, such as citizens, businesses, universities and international partners, in its policies and programmes for urban innovation" (http://ec.europa.eu/environment/europeangreencapital/winning-cities/2020-lisbon/).

2. REVIEW OF LITERATURE ON URBAN SUSTAINABILITY

Changes in the developmental concept and improvements in the quality of life start for most citizens at the comprehensive urban-political level, in which all social actors are included, from political to civic ones. The changes towards the urban sustainability concept can therefore not be efficient if they disregard the main social pillars. Sustainable development is regarded as a holistic concept, in which all four dimensions, or 'pillars', of sustainable development are included, and these are environmental, economic, social, and governance dimensions (Hiremath, Balachandra, Kumar, Bansode & Murali, 2013). It is only when all dimensions of sustainable development are included that real changes can happen and that agreed recommendations can come into effect. It is the European Green Capital Award (http://ec.europa.eu; Berrini & Bono, 2011) that is an example of an explanatory tool: where a well-defined set of indicators has been collated in order to evaluate the current state of the environmental dimension of sustainability in a city or urban area (Indicators for Sustainable Cities, 2015, p. 9). The environmental dimension is fundamental for improving the quality of life and satisfaction of inhabitants at the local level because it increases the primary satisfaction level, such as increasing public and green spaces in a neighborhood or in urban communities. Still, this cannot be accomplished until both the citizens (social dimension) and the politics (governance) are involved and aimed at contributing to mutual public interests.

Urban sustainability constantly seeks new working methods to improve people's life quality, by affecting, for instance, waste reduction and environmental awareness. However, the existing gap between the CEE countries and the Western EU countries is visible in applying sustainable and ecological standards. Every country is individually responsible for its sustainability, despite its EU membership, which eventually becomes a confining factor in reaching sustainability. Croatia and Zagreb, for example, have not progressed significantly on that matter and there is a problem of implementing the so-called good practices of European cities. Although well known, these practices are underexploited. The importance of reducing traffic or expanding public and green areas (especially in new housing locations), or household waste sorting and recycling, is still not accepted as part of the urban policies. The socio-spatial problems regarding the moving towards market mechanisms of spatial management have existed for two decades, hindering a more sustainable development that would include new technologies and methods, offered by some more successful European cities as healthier, greener and more favorable for living.

2.1. Citizen participation as citizen-led planning or place-based planning

Urban living of all EU citizens shares similar problems. Therefore, similar solutions can be reached and then adjusted to specific local living conditions. However, to reach the adaptation and improvement of the quality of life occasional cooperation of citizens is necessary in the process of decision making with city authorities. The citizens' participation process and authorities' cooperation with the

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local level create an opportunity for citizens to point to problems and shortcomings of their immediate living space, which they are most familiar with in their everyday community. Such goal can be reached by employing a 'new' type of planning that involves citizens and turning to their needs. Place-based planning or "citizen-led planning" entails a fundamental shift in the planning paradigm with the focus on facilitating communities in creating a concept for their future needs and wishes, while seeking to work with planning stakeholders on an egalitarian level. This can imply becoming more open to actors outside of traditional disciplines, therefore refer de facto to the inclusion of cultural, as well as other forms of knowledge (Fry, 2001), thus pointing to the various social, environmental and economic benefits that can be derived from exploring collaborative processes (Collier et al., 2013; Pichler-Milanovič & Foški, 2015, p. 53). Community-led projects and place-based planning as fundamental ideas are more or less incorporated in the process of spatial and urban planning and depending on the awareness of particular city about the need for such change.

However, when this type of planning does not exist in practice, as is the case in most post-socialist countries, it is much harder to instigate cooperation among various actors, because it relies traditionally on the already existing and traditional institutional way of operating, which changes very slowly. There are numerous barriers that hinder the new approach to cooperation and the very process of participation. Apart from traditionally closed institutions, not willing to accept the new way of communication, the cause of insufficient cooperation can also be seen in the so-called community capital and civic capital, which is less developed in post-socialist cities and societies. "Some of social barriers include the capacity of a community to adapt and to influence adaptive processes, local planning policies, the degree of community capital and the relative size of an area within the larger entity" (Collier et al., 2013). The reduction of capital and citizens' influence has caused omnipresent passivity and citizens' disinterest for participation and closure towards public problems on one hand, but, on the other hand, also the non-involvement of citizens in public policy, i.e. the reduction to a mere formalization of processes within existing laws. Politics itself slows down the process of cooperation. This pattern is typical of post-socialist cities affected by intensive processes of urban transformation and urbanization. It has opened space for various civic initiatives and NGOs to engage and become a contact of a kind between citizens and city policy. Although these organizations are very active, they often do not manage to stop initiated city projects and investments in favor of influential economic actors.

3. METHODOLOGY AS AN ANALYSIS OF THE CONTEXT OF CROATIAN URBAN PLANNING PROCESS

Citizen participation in post-socialist countries is described as a process without or with very little control over the process of planning. According to Croatian laws, participation is reduced to formal public access lasting 15 to 30 days for spatial development plans and depending upon whether it is the first round of insights or amendments as the second round. This is the time when citizens can

react with their remarks to the finalized planning documentation. Traditional or formal participation is proscribed by law and is binding, and in this way it involves citizens in the decision-making process. Therefore, it is an example of top-down participation that, from the level of authorities, mostly changes the space considering only minor remarks by citizens (e.g. regarding particular private location included in the plan)[3]. Public interest is pointed out as an important added value, but often without collaboration with citizens. The participation process is therefore not real participation, but serves political interests. Formal participation is called public access in which citizens' remarks do not need to be acknowledged. This unequal situation leads to the situation in which city institutions start certain projects which are not accepted by the public or can lead to the decrease of public spaces, which was often the case during the past 20 years. Then there is a post-reaction of a kind and an activist reaction mostly through NGOs and civic initiatives[4]. If it is about a conversion of city streets and squares and their decrease or undesirable renewal, there can be street riots and demonstrations with the aim to stop certain changes. However, even after demonstrations, city authorities do not change their decisions and despite citizens' disagreement, they insist to carry out and finalize them. Non-cooperation with citizens and disregarding their opinion is a common situation and so the participation process in the post-socialist context fails at the very first level. This is the so-called 'manipulation' with citizens or 'non-participation' (Arnstein, 1969, p. 217), which cannot change into a dialogue that would enable the beginning of cooperation and communication for both sides included. Public debate as a formal possibility of involving citizens in spatial plans lasts too short and does not exhibit the characteristics of real participative cooperation, because it does not include open communication and long-term perspective on real shortcomings and possible solutions, for example, the influence on the appearance of the neighborhood and public spaces.

4. RESULTS

It is therefore the digitalization of the participation process as a type of a bottom-up model that is one of the possible solutions to citizens' dissatisfaction and their greater participation. Through this model, cooperation and communication that is more open would be reached, and democratization of the participation process would be encouraged. The digital approach and access to social networks (particular groups of citizens on Facebook and other platforms as virtual communities) can

3   According to the Planning and Development Act "public access to the proposed National Spatial Development Plan lasts sixty days, while public access to proposals of other spatial plans lasts thirty days. Public access to proposed amendments and the repeal of spatial plan lasts between eight and fifteen days the most" (Planning and Development Act, 2019).

4   The example was a reaction of citizens to the renewal of the Meštrović Pavillion on Trg žrtava fašizma in Zagreb [Victims of Fascism Square] during 2018 and 2019 and their attempt to stop the project. The riots and demonstrations of citizens started when the project of the art pavilion and the nearby space renewal included cutting the trees and "clearing" the place of residents with pets and skaters who would often spend time there. The residents of the nearby streets and other citizens were extremely revolted when the project continued despite the demonstrations and when a magnolia tree was cut, by which the space became desolate and dehumanized and no longer responding to the citizens' needs. The whole process and the resistance initiative against such renewal was named 'Vratite magnoliju' ['Bring back the magnolia']. More: https://www.facebook.com/vratitemagnoliju/.

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help democratize possible cooperation with city institutions, and contribute that it does not remain merely a reaction to an already decided process of implementation. Pointing to certain shortcomings in the community would be detected via on-line civic action before the completion of the process of public access or its including in the planning documentation. It would motivate and involve experts of different profiles, who would be useful in managing the problem and communicating with the city officials. This naturally includes inverted communication and a bottom-up cooperation instigated by citizens via social networks and a digital type of communication to better promote citizen participation.

The main idea and example, although imaginary, but based on the concept of sustainability, for the cooperation of various actors in the community (from citizens and experts to authorities) would serve to involve citizens in digital platforms, and to design a digital civic lab model with urban sociologists' and architects' assistance, in order to conduct preliminary research of the situation in a particular neighborhood. Possible results from field work would be directed towards urban policy and administration representatives to facilitate collaboration. On-line networking of residents and then on-line questionnaires or interviews would initiate the next inevitable phase of bringing residents closer. More open cooperation of city authorities with citizens is inevitable goal of urban sustainability, because it establishes the communication between them more equally, in order to address public interests at the local level, primarily the level of city neighborhoods (by improving public and green areas, safer traffic etc.). The given example, through the phases of mapping problems in the neighborhood (problem detection, collaboration and implementation) provides an opportunity to strengthen participation and the influence of the citizens themselves in the process of decision making regarding the appearance of their immediate living environment. Additionally, these phases of cooperation would provide the means to overcome the present passivity among both the citizens and the authorities towards possible cooperation, and both sides would be educated about the importance of the very process itself.

5. DISCUSSION AND CONCLUSION

The situation in the post-socialist context, which can be seen on the example of Zagreb (Croatia), shows that the path to real participation is still long and full of hardship, but there are models of reaching the so-called European standards. It is the weak cooperation with citizens, i.e. the non-existent and non-transparent participation (non-participation) that creates the shortcomings of the existing model. The cooperation exists at the formal level of the so-called public access, which often does not change the situation in the living environment and the community. Therefore, an imaginary model of digitalized participation is presented here, which could be very easily applied in a real neighborhood of any city, and Zagreb as well. Its purpose is to change the present way of communication and transform it into a bottom-up model, which would be based on the Europeanisation principles of acknowledging citizens' needs for public and green areas, which would be more livable and healthier

for living in contemporary cities. The example of a civic lab, which would involve on-line networking of residents and then on-line questionnaires or interviews, would initiate a more active role of the citizens themselves, provided by the process of digitalization and the appearance of social networks, as a less formal mode of cooperation.

For now, citizens' demands are left to civic initiatives and the reaction after adopting plans, which is a conflict situation that does not contribute to the new way of participation that exists in some EU cities (citizen-led planning). However, it is the digitalization and on-line communication that is the path through which citizens' participation can be democratized, and through which they can become aware of the problems in their neighborhood. "Informed and involved citizens become citizen-experts, understanding technically difficult situation and seeing holistic, communitywide solutions" (Irwin & Stansburry, 2004, p. 56). Open cooperation would influence the raising of citizens' satisfaction and eventually the improvement of the quality of life and housing in the community.

To achieve this, it is important that spatial experts jointly attempt to instigate bottom-up collaboration through virtual communities on social networks. This can pave the way towards city officials, who can thus obtain coordinated and conceptualized citizens' demands intended for improving their own communities or particular neighborhoods, and to be incorporated in future plans. Without cooperation that is more open, it will not be possible to achieve mutually satisfactory democratization and to influence the direction of socio-spatial changes and processes. Both directions are possible, the one towards sustainable urbanity and a more open citizens' participation in creating the city, and the direction towards further stagnation and a status quo, leading to civic actions and demonstrations against city projects. The direction towards which Zagreb will position itself, remains to be seen.

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METHODOLOGY
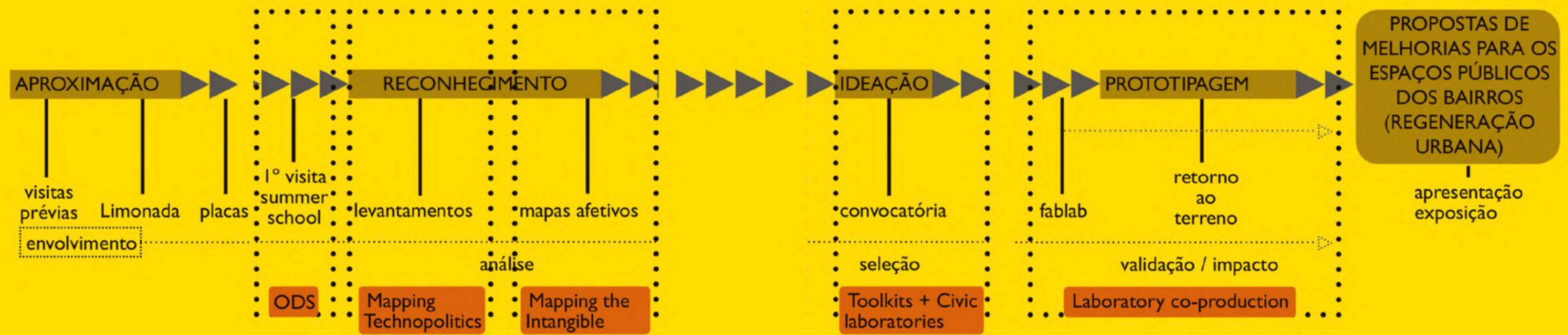
APROXIMAÇÃO

RECONHECIMENTO

IDEAÇÃO

PROTOTIPAGEM

PROPOSTAS DE MELHORIAS PARA OS ESPAÇOS PÚBLICOS DOS BAIRROS (REGENERAÇÃO URBANA)

visitas prévias

Limonada

placas

envolvimento

1º visita summer school

levantamentos

mapas afetivos

análise

convocatória

seleção

fablab

retorno ao terreno

validação / impacto

apresentação exposição

ODS

Mapping Technopolitics

Mapping the Intangible

Toolkits + Civic laboratories

Laboratory co-production

MASTERCLASSES

REAL SCENARIO ACTIVITIES

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Teachers: Ana Carolina Cardoso e Ana Catrina Graça

CO-PRODUCTION LABORATORY

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CÓDIGO DE BOAS PRÁTICAS PARTICIPATIVAS

Isadora Cabral, Nânci Pereira, Miguel Narciso e João Parcelas

PEÕES EM REDE
UM GRUPO. UM TALAÍDE

Claudia Pio, Pedro Pinto, Iasmin de Sousa

MUTIRÃO

Ariane Mendes, Elézer Carvalho, Mafalda Leitão, Raquel Sousa, Stefan Roman

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UM JARDIM AQUI
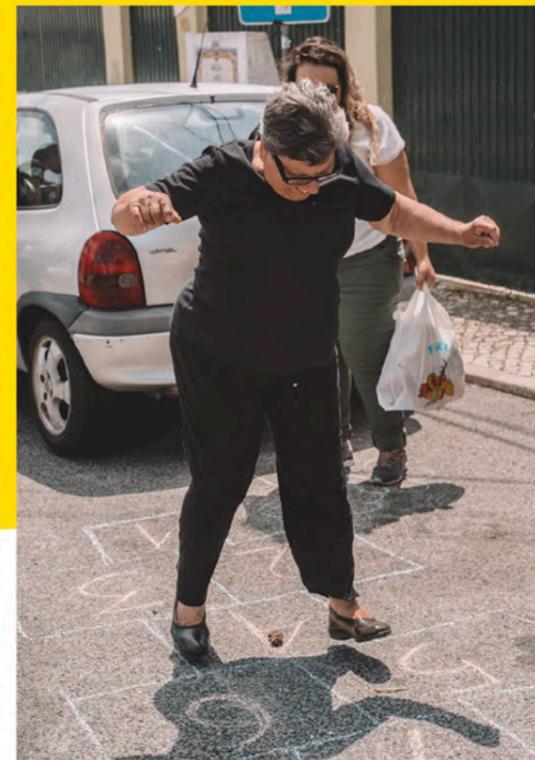
FINAL EXPOSITION

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OCUPA PEÕES

Elisabete Tomaz, José Hamra, Raquel Lopes, Sara Jesus, Vanda Carvalho

Pick-UP ribeira

Código de boas práticas participativas

ISADORA CABRAL , Centro Universitário Belas Artes de São Paulo | JOÃO PARCELAS , ISCTE-IUL | MIGUEL NARCISO , Câmara Municipal de Cascais | NANCY BOLETO , ISCTE-IUL

Contexto :

No **âmbito da escola de verão TECHNOPOLITICS IN URBAN REGENERATION** desenvolvemos um estudo sobre o Bairro Cabeço de Mouro B- S. Domingos de Rana, envolvendo visitas ao bairro, entrevistas a moradores e derivas sensoriais para identificar a melhor proposta de melhoria da qualidade vida dos moradores.

Proposta :

A presente proposta envolve a criação de um sistema interativo que poderá ser executado na sua versão digital **(protótipo de aplicação)** ou analógica, esperando-se que, por meio de esquemas didáticos e simples seja possível realizar intervenções ao longo da Ribeira de Sassoeiros, local que desperta o interesse dos moradores.

Rede social :

No formato digital do nosso protótipo, criámos um grupo no facebook, o qual vem a permitir o contato entre moradores e possíveis interessados em participar na revitalização da Ribeira Sassoeiros: Qualificar a Ribeira de Sassoeiros - Cabeço de Mouro.

1

Sensibilizar e mobilizar as pessoas

Promover as **opções interativas**

Gerar novas ações

Escolher entre ações existentes

Duplique as ações quando necessário e localize-as ao longo da ribeira

Estruturar a agenda e definir os papéis

Atenção aos códigos de advertência **!**

Execução

2

Criar espaços públicos

Promover as **opções interativas**

Gerar novos projetos

Escolher projetos existentes

Duplique os códigos quando necessário e localize-os ao longo da ribeira

Estruturar a agenda e definir os papéis

Atenção aos códigos de advertência **!**

Execução

3

Pouca mobilização ?

Volte à etapa 1 e recomece ou experimente o modelo analógico em Cabeço de Mouro

Satisfeito?

Vamos à manutenção

Necessário reintervir ?

Volte à etapa 2

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ISCTE◇IUL Instituto Universitário de Lisboa | ISTAR◇IUL Information Sciences, Technologies and Architecture Research Center ISCTE-INSTITUTO UNIVERSITÁRIO DE LISBOA | DINAMIA'CET Centre for Socioeconomic and Territorial Studies | FCT Fundação para a Ciência e a Tecnologia | FAB LAB | CASCAIS Tudo começa nas pessoas

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PEÕES EM REDE

Timeline:

- DÉCADA DE 60 — EXÔDO RURAL
- 1961/1974 — GUERRA COLONIAL E DESORGANIZAÇÃO
- 1974/1976 — SURGIMENTO DO BAIRRO / RETORNO DAS EX-COLÔNIAS
- 1976 — SR. JOSÉ PINTO COMPRA TERRENO
- 1977 — SR. JOSÉ PINTO GANHA TERRENO POR USO CAPIÃO EM TRIBUNAL
- 1987 — FUNDAÇÃO DO "CANTINHO DA GRAZIELA"
- 1995 — LEI DAS AUGI LEI 91/95
- 2000 — ABERTURA DO SALÃO DONA MANOELA
- 2007 — PROCESSO DE URBANISMO ENTRA NA CÂMARA
- 2009 — ABERTURA CAFÉ "A CHAVENA"
- 2012 — PRIMEIRA FASE DO PLANO APROVADO EM REUNIÃO DA CÂMARA
- 2019 — REUNIÃO DE MORADORES APROVA SOLUÇÃO ACTUAL DO PROCESSO DO LOTEAMENTO

REDE SOCIAL

REDE DE SERVIÇOS

REDE DE ESPAÇOS

DIAGNÓSTICO URBANO

O QUE OS UNE?
REGULARIZAÇÃO DO BAIRRO
HISTÓRIA
PROCESSO DE LEGALIZAÇÃO

PARCEIROS:
- MORADORES LOCAIS
- CAFÉS
- RESTAURANTE

AÇÕES:
- ASSOCIAÇÃO DE MORADORES
- SITE DO BAIRRO

SERVIÇOS EXISTENTES:
- CAFÉS
- RESTAURANTE
- CABELEREIROS
- MECÂNICOS
- SERRALHERIA

O QUE FALTA?
- ESPAÇOS PÚBLICOS
- ARBORIZAÇÃO
- PARQUE INFANTIL

RISCOS:
- LIXEIRAS
- ESPAÇOS SUB-UTILIZADOS
- ESTACIONAMENTO DESORGANIZADOS
- FALTA DE PASSEIOS

OBJETIVOS
- RUAS ARBORIZADAS
- PARQUE URBANO
- LARGOS
- HORTAS URBANAS

IASMIN JAIME - UFG   CLÁUDIA PIO - CM CASCAIS   JOSÉ PINTO - ISCTE-IUL

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RISCOS

OPORTUNIDADES

AÇÕES

BEM-VINDOS
À REDE DOS PEÕES

VOCÊ ESTÁ AQUI
REDE SOCIAL
REDE VERDE
REDE DE SERVIÇOS

TALAIDE

PEÕES EM REDE
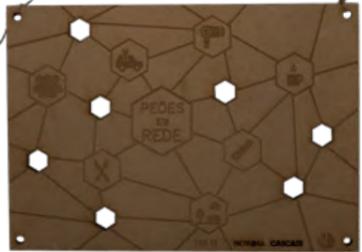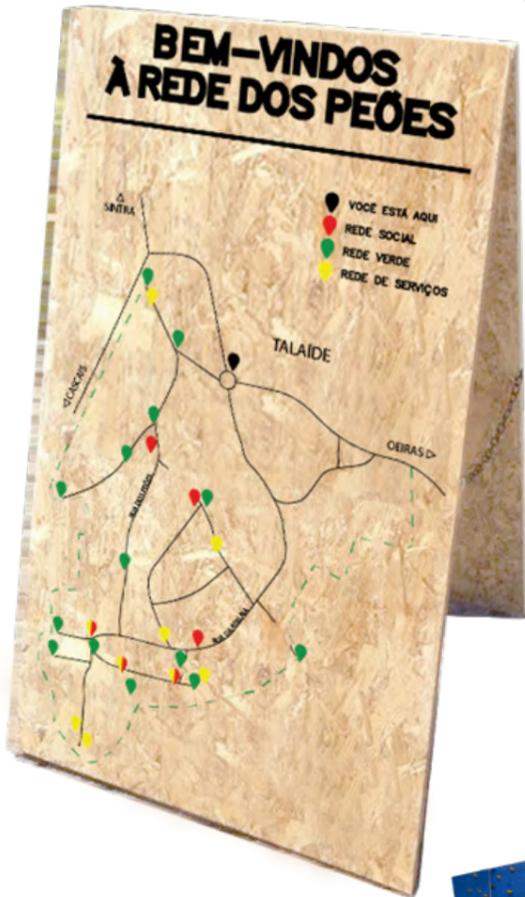
MUTIRÃO (Iniciativa colectiva para auxiliar alguém, para ajuda mútua ou para um serviço comunitário)

ARIANE MENDES, UFC-FORTALEZA | ELIÉZER CARVALHO , ISCTE-IUL | MAFALDA LEITÃO, CM-CASCAIS | RAQUEL SOUSA , ISCTE-IUL | STEFANI ROMAN, ISCTE-IUL

"O caminhar considerado como uma combinação de movimento, humildade, equilíbrio, curiosidade, cheiros, sons e luz e um sentimento de desejo. Um sentimento de querermos alcançar uma coisa que procuramos, sem a encontrarmos. Na língua portuguesa existe uma palavra intraduzível para este desejo: saudade." (Erling Kagge)

TIMELINE ESPACIAL que procura incentivar quer os moradores, como também visitantes a percorrer o bairro de modo a entender as variadas memórias do espaço. Esta TIMELINE procura mapear as histórias da comunidade interligando o espaço público e as memórias propiciando meios de comunicação quer entre a comunidade, como também entre esta e a Câmara Municipal. Estes meios de comunicação procuram resolver a falta de união entre os moradores, provocada pela inexistência de espaço público.

PERCURSO SENSORIAL

↓

CONSTRUIR UM NOVO MAPA PARA A COMUNIDADE

↓

PARTICIPAÇÃO COMUNITÁRIA

Incentivo a percorrer o bairro e protótipo para espaço público.

"GOSTAVA DE TER UM ESPAÇO LÚDICO E DE CONVIVÊNCIA JUNTO À RIBEIRA"

"Já se realizaram concursos de Petanca e festas"
"Gostava de ter locais cobertos e bancos próximos que conduzam a uma maior proximidade"

"Na Rua de Lamego são todos de Lamego e há muita entreajuda"
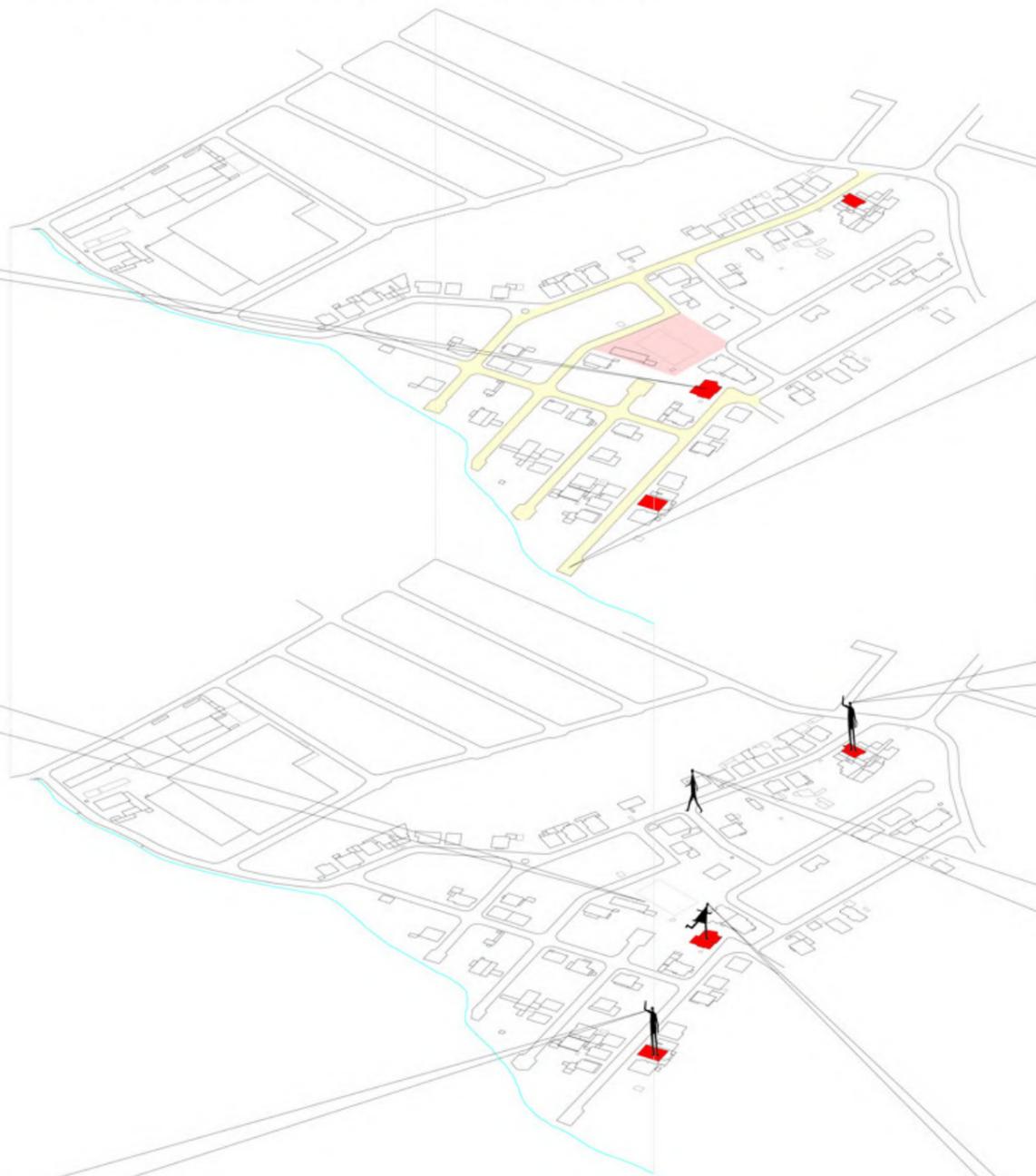
Não se encontram pessoas nas ruas.
" Onde brincas?
No meu quintal".

"Lembramo-nos das festas da nossa terra natal"

"Gostamos de apanhar flores junto à ribeira"

"Trabalho cá há 15 anos e as intervenções no espaço já tinham sido executadas. Mas já há 15 anos não houve mais mudanças"

"Cada um tem a sua horta"

"No centro comunitário realizaram-se festas, e gostaria que volta-se a acontecer... é necessário locais cobertos e banco próximos que conduzam a uma maior proximidade"

"Gosto de andar a pé";
"Tenho carro, mas também uso a bicicleta";
"Gosto de passear com o cão"

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Toolkit stencil

Time-line Espacial e Prototipagem Espaço Público
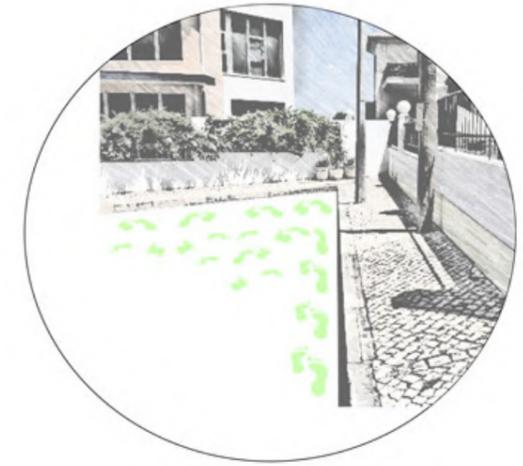
Coletor de Memórias

Arquivador da Recolha

Desafios

Qualificação do Espaço Urbano

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24 JUN - 06 JUL / 2019   ISCTE-IUL + CM Cascais

OCUPA PEÕES

ELISABETE TOMAZ, ISCTE_IUL | JOSÉ HAMRA, Pesquisador Independente |
RAQUEL LOPES, UAL | SARA JESUS, ISCTE-IUL | VANDA CARVALHO, CM CASCAIS

AUGI: Bairro dos Peões, São Domingos de Rana, Cascais

Um **urbanismo participativo** permite que a **comunidade** contribua para modificar o espaço urbano e o local onde vive, congregando diferentes abordagens, visões e realidades existentes no **território**. Este pode ser alimentado por **micro-práticas** de **"urbanismo tático"** no sentido de promover a **reapropriação do espaço urbano** pelos seus principais **atores** bem como a **ativação das comunidades**.

OBJETIVO GERAL

Estimular a **participação** e o **empoderamento** da **comunidade** através ferramentas/propostas criativas para **resolução de problemas**, demonstradas em **ações informais e temporárias no espaço público**, cujo resultado pode contribuir para **decisões políticas de longo prazo**.

Lazer **ESPAÇO**
Encontro **PÚBLICO**
Memória
Mobilidade
Segurança

REAPROPRIAÇÃO Adequação à vida quotidiana
DO ESPAÇO PÚBLICO Melhoria da segurança
Promoção de relações de proximidade
Aumento da participação cívica
Ativação da comunidade

PRACETA DOS PEÕES

RUA DAS GIESTAS

RUA DOS PEÕES

LARGO DOS PEÕES

RUA DAS PAPOILAS

RUA DAS FLORES

RUA DA ATALAIA

RUA DOS FUNDADORES

ESCADINHAS DO CARTAXO

via automóvel
espaço público
lote não construído
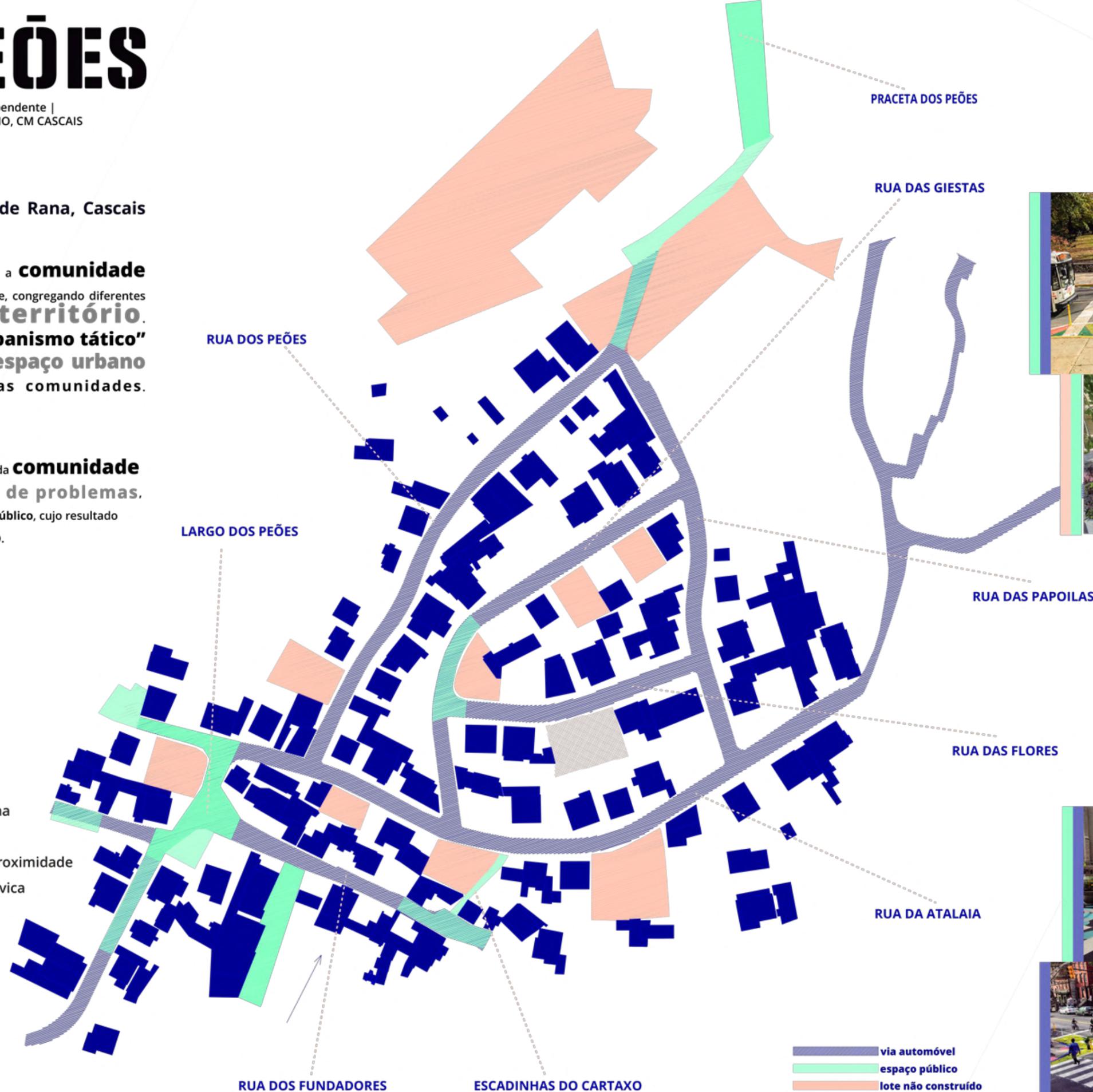
JOGO DE INTERVENÇÃO NO ESPAÇO PÚBLICO
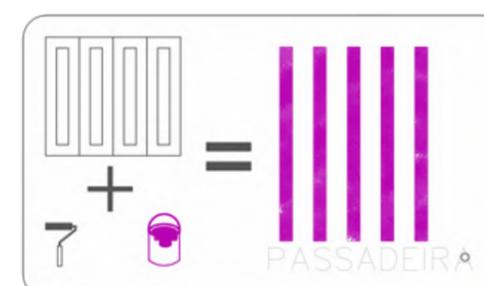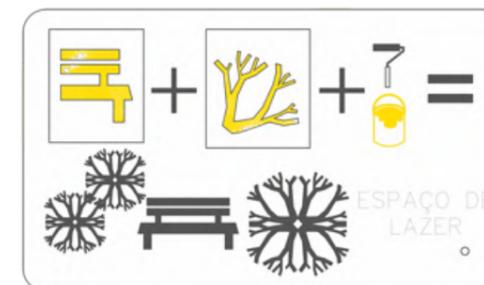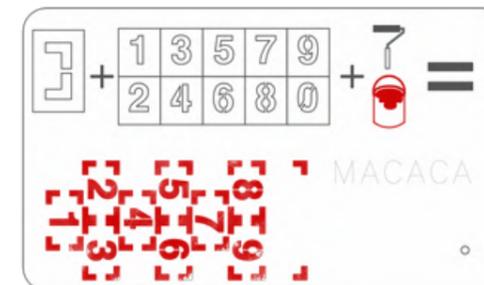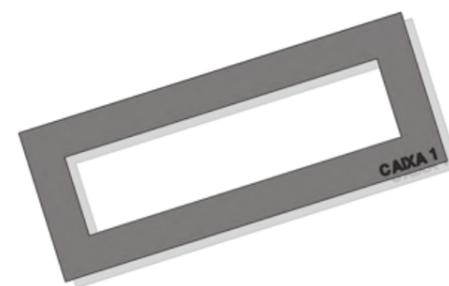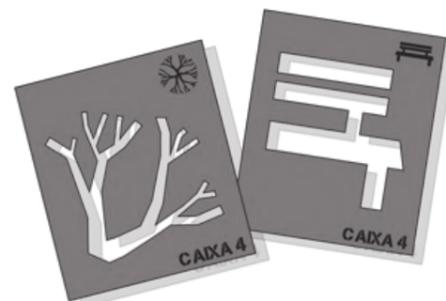
Este é um jogo de aventura.

A ideia deste jogo não é mudar posições num tabuleiro, mas sim num bairro.

Assim como as pessoas, este bairro também é vivo. Cresce, evolui, amadurece e transforma-se. Mas é diferente de outros jogos. Aqui, são os peões que mudam o tabuleiro ou, se se preferir, pode se dizer que neste jogo são os peões que mudam o bairro. O que importa é que aqui sempre foi assim que se jogou. Neste pedaço de terra, peões que mudam o tabuleiro não se trata de novidade, mas de tradição.

REGRA 01: Quanto mais gente melhor e mais divertido o jogo, sempre!

REGRA 02: Este é um jogo de intervenção no espaço público. Os mostruários possuem cartas de ideias de aplicação, os moldes guiam para a prática e as fotos são exemplos para estimular a criatividade.

Posicionam-se os moldes onde se gostaria de intervir e pinta-se com as latas de spray os símbolos.

REGRA 03: Usar a criatividade sempre, inclusive podem usar se as cartas, fotos e moldes de outras maneiras.

DESAFIOS

Caixa 1
Incentivar os automobilistas a circular a uma velocidade reduzida e, desta forma, respeitar a mobilidade dos peões.

Caixa 2
Fazer com que os automóveis não atrapalhem a vida dos moradores ao estacionar de forma inadequada.

Caixa 3
Criar espaços de jogos para crianças, adultos e idosos se poderem divertir no próprio bairro.

Caixa 4
Criar espaços públicos para estar, descansar e conversar.

CAIXA 3 · CAIXA 2 · CAIXA 4 · CAIXA 4 · CAIXA 2 · CAIXA 1

MACACA · ESPAÇO DE LAZER · CUIDADO COM AS CRIANÇAS · PASSADEIRA

ANÁLISE E REFLEXÃO	CURTO PRAZO	MÉDIO PRAZO	LONGO PRAZO
Observação e mapeamento participativo	Micro-práticas para resgate do espaço público	Micro-práticas para resgate do espaço público	Análise do impacto das Micro-práticas
AÇÕES Visitas ao Bairro dos Peões Entrevistas à população Registo áudio-visual do bairro Timeline virtual	**AÇÕES** Evento Pop-Up Largo *Este Largo podia ser* Entrega de jogo de Intervenção no espaço público à Associação de moradores Dinamização de Tarde de jogo	**AÇÕES** Continuação dos Eventos POP UP: Pop Up Escadinhas, Pop Up Praceta Jogo de Intervenção no espaço público	**AÇÕES** Análise e registo fotográfico do impacto do jogo no espaço público Disponibilização online e entrega à Câmara Municipal de Cascais
PARCEIROS Moradores do Bairro dos Peões Associação de moradores ISCTE - TUR Câmara Municipal de Cascais	**PARCEIROS** Moradores do Bairro dos Peões Associação de moradores ISCTE - TUR Câmara Municipal de Cascais	**PARCEIROS** Moradores do Bairro dos Peões Associação de moradores Colectividades locais	**PARCEIROS** Moradores do Bairro dos Peões Associação de moradores ISCTE - TUR Câmara Municipal de Cascais
PROMOÇÃO DAS RELAÇÕES DE PROXIMIDADE	AUMENTO DA PARTICIPAÇÃO CÍVICA	ATIVAÇÃO DA COMUNIDADE	MELHORIA DA QUALIDADE DO ESPAÇO PÚBLICO E SEGURANÇA
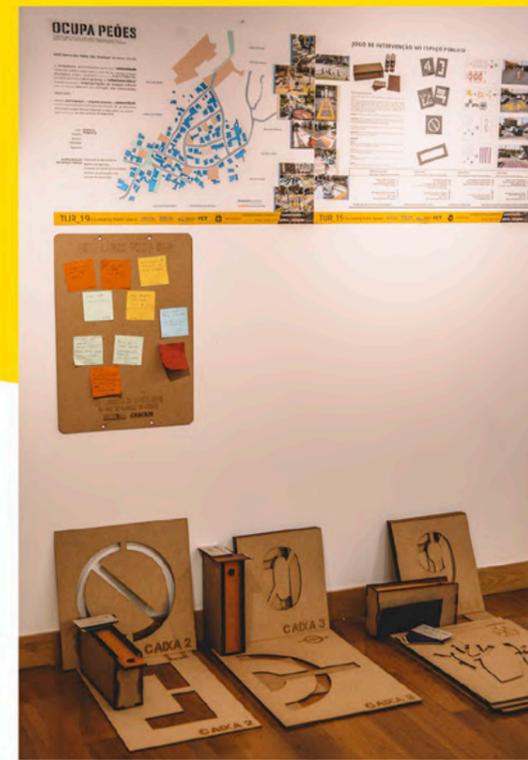
ORGANIZAÇÃO

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PARCEIROS

CASCAIS