METÁFORAS DE UMA TECTURA URBANA: ESTUDO DE CASO NO BAIRRO SERRINHA, FORTALEZA

URBAN WEAVING METAPHORS: A CASE STUDY IN SERRINHA NEIGHBORHOOD, FORTALEZA

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Abstract

This paper explores three levels of interpretation of the urban interweave metaphor, exemplified in the Serrinha neighborhood of Fortaleza. The first approach observes Fortaleza's urban mesh from above, through common perspective for urbanists but removed from the day-to-day experience though no less relevant in relation to the urban mesh: a patchwork, pieces of landscapes, flow, uses, connected by interpretations and diagnosis. From a macro view to a micro, one observes the Serrinha neighborhood and in it a specific locality. The second view concerns the open body, which needs to be sutured. It is the problems identified in this place, where the consequences of the irregularities of the larger system emerge at a point that makes explicit its urgent need for healing. The third approach concerns an interweave made up of invisible lines, nuance that compound a process, a work team, the construction of local identity and the project, which stitch together the goals and the transformations related to the levels previously analyzed.

Key words: Urban system, Participatory process, Local identity, Urban regeneration.

Interlacing, sutures and stitches in a process of active transformation

To understand the city as a fabric, it is not enough to observe it; one needs to be the thread, the needle, the movement, the element of composition and, sometimes, untying of knots. Some urban situations unfold at different levels of complexity. They are concrete situations, individuals, groups, information, actions, rock and spindle in wheel in the time inapprehensible of daily interweaving, to the point of amalgamating what weaves in what is woven.

In 2014, the Universidade Federal do Ceará[1] (UFC) received a request from a non-governmental organization to solve serious problems of a space in Serrinha neighborhood, in Fortaleza. The level of complexity and the need for joint and organized social action extended through the end of 2015, when we concluded the project and, for us, the process.

In an urban mesh, the overlapping layers are informal dwellings in environmentally fragile areas. From a systemic point of view (Vieira, 2008), we can say that these occupations occur to satisfy the permanence of systems in a condition of social fragility, collateral spaces within the formal city, especially when this city is thought within a logic that doesn't include the dynamic interweaving of different levels of reality that coexist in it. So, communities with bad economic conditions and high social vulnerability elaborate the environment through a tacit logic of self-organization, the result of a chain of elaborate internal connections, although not always consciously. As a result we observe unexpected situations that are often unhealthy and meet an immediate need of the system, which generally doesn't offer solutions for a longer stay

We have then the production of a kind of collateral space, by-product and sum of waste from the urban fabric that has nothing to do with formal city plans.

The urban fabric, whose seams of understanding and interpretation take us to the scale of the neighborhood, offers the plan to understand this special type of space in its most immediate context, with specific problems. When we observe this scale, in the physical center of the city, in the Serrinha neighborhood, we identify a subsystem of informal dwellings in an environmentally fragile area with open sewage in the midst of a pile of waste that invades homes in the rainy season, which last four months of the year in Fortaleza. The scene is of an open body, which needs urgent suture.

In this reality, one to one scale, a proposal of urban regeneration is elaborated with a first node at the end of the line, a principle, a party: that the weaver of the mesh and the surgeon of the suture are participants and understand the problem no more from of a segmented vision, based solely on their expertise and on the choice of the "right" purposes and lines. A proposal that interweaves possibilities, in the variety of possible points for the embroidery of this body-space full of coexistences, with its many differences, that expands and modifies in a dynamic and complex way, out of any control and in the absence of planning.

There are several stakeholders involved in the project: universities, non-governmental organizations, local associations, different sectors of municipal government that, especially with the residents who have their front doors facing the space in question, a work team.

The sewing lines of a participatory process aren't immediately visible, but they are the stitches of all the connections that make possible a process of active transformation in a space-social situation that demands of the community the consciousness for a new perspective from where it is seen in the place of a dumping ground, a square.

At the UFC, through an organizational and mediating view of project-process, we learn that the tangle of complexity needs, by a need for internal coherence, to be aligned at home. With the purpose of including teaching, research and community outreach, the famous tripod of the public university, in a process of such complexity and paradoxically punctual, three teachers assimilate the problem in the disciplines of design and urban design. A social design laboratory and a model office of architecture and urbanism turn exclusively to the project and, with the team formed and the diagnosis defined, begins the work of a year with monthly community meetings in place in January of 2015. Thus we perform a warp made with many hands, direct action and interlaced lines, the meta-metaphor of a darkened history in the city, in the university, in the neighborhood, in the square, in the memory of the people who weave, in the gaze of what happens, in life Of the ones that remain.

Fortaleza is the city - urban weave metaphor

In a first glance, the approach between the observer/researcher and the object/place of study/interest occurs through maps and secondary data that show a wide and distant scale. This view, initially, may seem overly technocratic, but it is only one of the numerous filters necessary for understanding space and social relations in question.

The city is Fortaleza. State of Ceará's capital, one of the four capitals of the country in terms of population density with an estimated of 2,609,716 inhabitants, according to data from the *Instituto Brasileiro de Geografia e Estatística*[2] (IBGE, 2016). This characteristic is the result of an accelerated population growth that culminated in the disorderly occupation of several areas of the city and in a qualitatively and quantitatively disqualified urban fabric in public free areas.

Most of the land destined for public spaces are areas considered environmentally fragile, such as the banks of water bodies, dunes and slopes, which become susceptible to the construction of precarious housing and without basic infrastructure. In Fortaleza, there has been an intensification of the occupation process along the water network by dwellings in a precarious situation and lack of basic infrastructure.
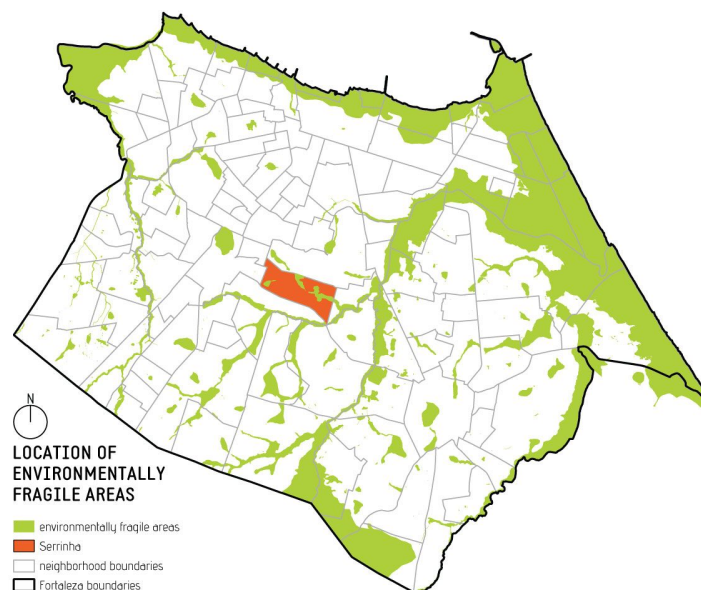

Fig. 1: Location of environmentally fragile areas in Fortaleza. Source: prepared by the authors based on a survey of the *Diagnóstico Geo-ambiental de Fortaleza* (2009).

Figure 1 shows a demarcation made by the *Diagnóstico Geo-ambiental de Fortaleza*[3] (2009), where the most unstable areas of the city are highlighted, corresponding to the environmental systems that demand a greater degree of natural conservation and,

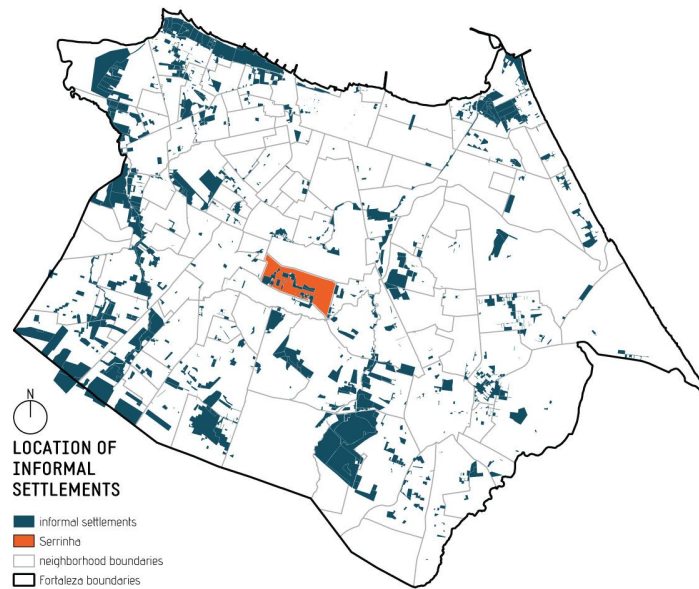therefore, where the occupation should be discouraged.

However, Figure 2 shows the overlap between the fragile areas mentioned above and the irregular dwellings mapped by the Municipality of Fortaleza in 2012 in the period of preparation of the *Plano Local de Habitação de Interesse Social*[4] (PLHIS).

This information evidences an appropriation process of free areas that compromises natural resources and aggravates environmental disasters. In addition, most of the dwellings located in these regions are inadequate from the point of view of health and human dignity by subjecting residents to high levels of socio-environmental vulnerability.

What we have in this scenario is the interweaving of data and maps, numbers and georeferenced information, which are reflected in the daily space of the Serrinha neighborhood discussed in detail below.

The neighborhood

The Serrinha neighborhood is located in an urban context of reasonable infrastructure, with garbage collection service carried out by the municipal government, connection with the general water network, existence of electricity in more than 90% of the dwellings of the neighborhood (IPECE[5], 2012) and a road network with good connections with the all the city.

These favorable urban conditions compromise the empty environmentally fragile areas of the neighborhood by means of pressure by occupation. As these unstable lands remain vague due to the lack of interest in the formal market due to their environmental constraints, they become remnants of the urban fabric and are appropriated by the low-income population as a means of accessing the city.

The map below (Fig. 3) is an enlarged junction of Figure 1 and 2. In it is a patch corresponding to the informal settlements advancing on the unstable terrain of the neighborhood.

Fig. 3: Overlap between environmentally fragile areas and precarious settlements in the Serrinha neighborhood. Source: prepared by the authors based on a survey of the *Diag Geo-ambiental de Fortaleza* (2009) and PLHIS de Fortaleza (2012).

The dynamics of neighborhood's informal dwellings is best understood when it is related to other factors. The initial settlement ignores specific issues, overlapping a orthogonal mesh with the geographical reality and disregarding the contours of the water mirror of the *Lagoa de Itaperaoba*, the area's main water resource. This design induces the confinement of the Lagoon by buildings and roads and entails the waterproofing of originally floodplain areas, a fact that generates a situation of insecurity due to the risk of flooding. This condition of environmentally fragile area induces informal settlement, which breaks the logic of planned settlement.
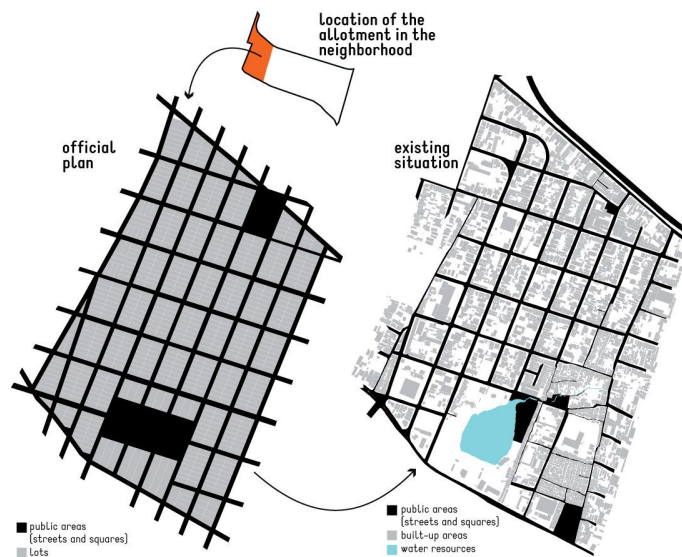

Fig. 4: Comparison between the allotment project and the actual situation. Source: Elaborated by the authors based on heliographic copy provided by the community and cadast of the city.

Added to this is the pollution of the lagoon generated by household waste from clandestine connections made with the drainage network. It is worth noting that the sanitary sewage network is insufficient, present in 16% of the total households in the neighborhood (IPECE, 2012).

Faced with the few free areas present in the neighborhood, our study area stands out as an urgent site of urban regeneration that emerges as a residual space, where so many layers of complexity accumulate that it becomes impossible to apply traditional design models, which distance this space of intervention by the government that doesn't have tools to deal with this reality. Nevertheless, these fragments are part of urban life of dynamic psychosocial systems, also marginal communities that occupy the environment in search of permanence.

The place, open body metaphor, suture

When we arrived at the place, we saw a space surrounded vertically by the *Instituto Irmã Giulianna Galli*[6] (IIGG), which houses a kindergarten, some formal and informal dwellings, walls, a clothing store, a hairdresser, a collective clothesline and a corner with an altar, who usually keep a traveling saint. On the floor, bordering the kindergarten, a stream with countless clandestine connections of sewage, bleeding from the *Lagoa de Itaperaoba*, plus an unhealthy accumulation of domestic waste and remains of bricklaying, interfered to the flow of people, goats, pigs, chickens, rats, dogs and horses. The Institute's request for the university is to transform

space into a place that is suitable for use, especially for children, since less than a block away there is also a municipal elementary school.

The conformation of this space also obeys a logic of its own. It appears as a broad, a breath in the high density of occupations. Its irregular outline is a direct result of the accumulation of buildings around, replacing the logic of the orthogonal mesh with an organic design. Despite the space unit, the site is an official clump of remnants, between remains of particular lots and stretches of discontinuous roads.

Fig. 5: Layers of problems. Source: Elaborated by the authors.

In the defining problem process we recognize the residents identification lack with the place, which justifies using it as the place where garbage is played. An objective then becomes to make this space a place, with identity and a sense of belonging.

'[...] a portion of space signified, that is, whose fixed and flows are assigned signs and values that reflect the culture of a person or group. This significance is less a way of taking possession of these elements and more of impregnating them culturally so that they serve to identify the person or group in space, so that they find themselves reflected in certain objects and actions and can thus guide To find and construct their cultural measure in space' (Duarte, 2002, p.65, our translation).

Thus, one of the points of the suture is the attribute of identity, the line that goes through, bridges and unites the inhabitants to space, so that the "who am I" is entangled in the "where am I". Being from Fortaleza means that no matter where in the world you are, Fortaleza is in you. On the contrary, the use of space also gives it identity. The place is made up of people, a confection made by residents and those who pass by, watch over and leave their passage impregnated in the memory, the history, the culture of the place. The places have accents and are always special.

Therefore, making space a place becomes part of the main immediate goal. Seek that people there feel that space belongs to them and that they can appropriate it in another way, with other uses.

The second point of the suture is more technical, no less elaborate and necessary, and concerns the process of understanding that the pieces of local problems diagnosed are part of the larger body of the urban fabric that is figured in it. It is necessary to join the lines that make up the mesh to wipe the patchwork of problems in a composition that implies environmental, political and social complexity in a square design and in its construction. At this point, which is given simultaneously to the previous one, the project is realized by means of a continuous and spiral movement that alternates propositions, interventions and analyzes of the process-project for the next propositions, interventions and analyzes, successively.

Design and construction of identity, sewing between the lines of the process.

When the social context surrounds the university and enters the classrooms, the laboratories, the courtyards, at the same time as the apprentices and students take to the streets, a new space of exchange and legitimation of the differences arises. Paulo Freire (1983) understands community outreach as an emancipatory tool, since all involved become producers of their own knowledge, through a collective interaction. The university is permeabilized, the invisible wall that separates the inside and the outside is diluted, as well as the hierarchies, to give place to a horizontal exchange of knowledge. What is known in the daily life of the place, in conviviality with the problem, is no less and no more relevant than the scientific, technical and academic ways of seeking solutions. From the streets to the classroom, in a seam of alternating and continuous movements, the research emerges as a methodological inevitability of understanding and elaboration of the stages project development, not always predictable. In the case of architecture, urbanism and design, the design process itself is considered to be research (Margolin, 2004). Each immersion in the local reality adds new requests in a sense of improvement and adaptation of the processes of design to the reality in a progressive continuum where the technical solution of specific problems, the production of collective knowledge and the construction of a local identity are made with the same thread. Social actions in space are incorporated into the project as decisive creative interventions and the antagonisms between theory and practice, teacher-student, university-society are approached with equanimity in teaching, research and community outreach. The concept of horizontality, defined by Milton Santos (2001, p.108) as "zones of contiguity that form continuous extensions" brings to the surface the guiding weaving principle: the horizon of human relations.

For this purpose, we must sew different areas of knowledge, distinct perspectives that need to coexist in a participatory process of urban regeneration. The very structure of the loom requires flexibility and appropriateness of tools, lines, movements and an objective perseverance in action, where the focus is not bound to the end, but to the designs of a line of conduits and connections.

Work team

A team composed mainly of students, teachers and users of the place carries out for a year multiple functions. The situation requires that they be mediators, architects, designers, apprentices, sociologists, anthropologists, engineers, environmentalists, local experts, collaborators, tailors, with the precise needles in the organization of the different extracts of complexity involved in the process of transformation of the dumping ground in one place, the square. The IIGG, which houses the kindergarten and day care centers, has a fundamental, local, experiential, referential and daily function. It is also the physical space that hosts the community meetings, since it is contiguous to the future square. The UFC mediates between the cooperations and organizes the multiple information, deciding with the partners and residents present to each group, the next steps. In the university, the actions were distributed in three main areas: in the *Varal - Laboratório de Iniciativas em Design Social*[7] the construction of local identity, through strategic design devices used mainly during the joint efforts, organizing the complexity of the information related to the process and the Realization of the visual identity of the project, applied in presentations to public agencies, in the realization of partnerships and in the community; in the *Canto - Escritório Modelo de Arquitetura e Urbanismo (EMAU)*[8], technical research, urban planning and the development of the participatory project of the square; in the disciplines of Urban Design I, the Architecture and Urbanism course and in the Project I discipline, of the Design course, which directly involves all students enrolled in the local reality and plays an important role in the diagnosis of the problem and in indicative solutions.

Local identity construction

In 2014, the community outreach project "*Praça Ecológica Vila Garibaldi*"[9], linked to the Canto - EMAU community outreach of the UFC, starts the activity "*Aqui pode ser*"[10], a proposal of interaction that delimits with a strip the place, where posters are fixed for that the residents post-its opinions about what they imagine and want there, in order to identify the requests of the community. In the same period, design students incorporate the problem into the design discipline and present eleven different solutions to the garbage problem. At the end of the year, the UFC presented the students' projects at a meeting held at the school for an audience of IIGG administration members, as well as some students and professors from the Universidade Estadual do Ceará[11] (UECE) who also community. In the end, together, we decided to continue the project in 2015, with the initial definition of monthly meetings throughout the year and the clarity of the interdisciplinary need for action.

In the first four months, the focus is directed to participatory strategies, an intense search of transformation of residents' behavior in relation to space. During the process, photography presents itself as a powerful identity-building feature.

The first strategic device applied to the project is a sequence of calendars released monthly, with information from the days of garbage collection. Through the photographic register of the inhabitants and the community meetings, a representative photo of the month is chosen, applied to the calendar of the following month. As a result, people recognize themselves in the image, join the meetings and become interested in the project.

Fig. 6: Calendars distributed in the community meetings. Source: Varal Archives.

In addition to capturing the images, the social design group faces internal demands for the project, lines that need to be tailored: 1) organization of the actions, given the level of complexity, comprehensiveness and dynamics of the process; 2) elaboration of the proposal in an understandable language in order to reach the community itself and boost its participation; 3) dissemination of monthly efforts; 4) realization of partnerships regarding services and public spaces with municipal and state agencies; 5) promotion of the exchange of knowledge among those involved for understanding and possible adjustments of the process; 6) creation of devices capable of generating a sense of belonging of the residents in relation to the public space; 7) production of communications

about the project, specifying the material needs, to search for and obtain resources; 8) dissemination of the actions and knowledges that involve the project in the academic scope; 9) organization of registration, archiving and articulation of information for publications. For each of the demands strategic devices are elaborated from three parameters: graphic, digital and artifacts.

The methodological basis of action-research (Tripp, 2005; Toledo and Jacobi, 2013) is broadly embedded in the design scenario. A preliminary seam, responsible for creating a knowledge platform that guides the design process - the metaproject (Moraes, 2010) - and another applied as a continuous improvement of the practice of participatory, collaborative and co-creative interventions in alternate cycles by interactions and analyzes. Thus, the demands of the process indicate the need for new devices, which are realized and vary according to the action strategy.
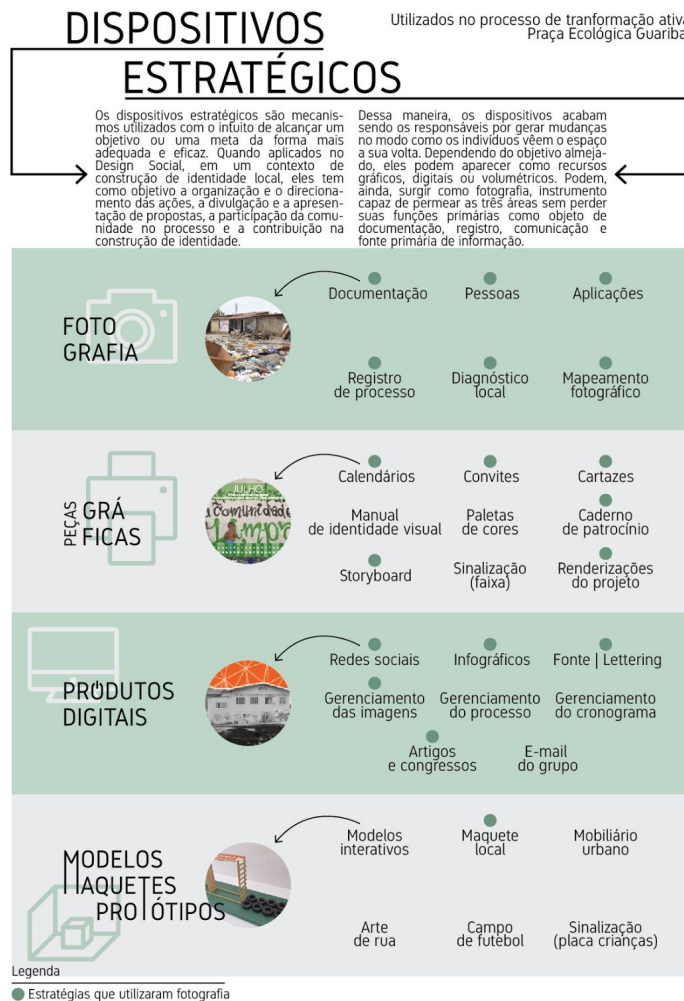

DISPOSITIVOS ESTRATÉGICOS

Utilizados no processo de tranformação ativa
Praça Ecológica Guaribal

Os dispositivos estratégicos são mecanis-mos utilizados com o intuito de alcançar um objetivo ou uma meta da forma mais adequada e eficaz. Quando aplicados no Design Social, em um contexto de construção de identidade local, eles tem como objetivo a organização e o direciona-mento dás ações, a divulgação e a apresen-tação de propostas, a participação da comu-nidade no processo e a contribuição na construção de identidade.

Dessa maneira, os dispositivos acabam sendo os responsáveis por gerar mudanças no modo como os indivíduos vêem o espaço a sua volta. Dependendo do objetivo almeja-do, eles podem aparecer como recursos gráficos, digitais ou volumétricos. Podem, ainda, surgir como fotografia, instrumento capaz de permear as três áreas sem perder suas funções primárias como objeto de documentação, registro, comunicação e fonte primária de informação.

FOTOGRAFIA
- Documentação
- Pessoas
- Aplicações
- Registro de processo
- Diagnóstico local
- Mapeamento fotográfico

PEÇAS GRÁFICAS
- Calendários
- Convites
- Cartazes
- Manual de identidade visual
- Paletas de cores
- Caderno de patrocínio
- Storyboard
- Sinalização (faixa)
- Renderizações do projeto

PRODUTOS DIGITAIS
- Redes sociais
- Infográficos
- Fonte | Lettering
- Gerenciamento das imagens
- Gerenciamento do processo
- Gerenciamento do cronograma
- Artigos e congressos
- E-mail do grupo

MODELOS MAQUETES PROTÓTIPOS
- Modelos interativos
- Maquete local
- Mobiliário urbano
- Arte de rua
- Campo de futebol
- Sinalização (placa crianças)

Legenda
● Estratégias que utilizaram fotografia

Fig. 7: Infographic of the strategic devices applied. Source: Varal Archives.

In May we recognize that communication needs to be more direct. The images of the project are rendered and applied in photos of the place, for a greater identification of the community with the proposal "Let's build together our square!", Presented at a Mother's Day event at school. The following month, when we arrived for the joint effort, we came across the clean ground, covered with sand, children playing ball and a graffiti wall with the words "Guaribal e Favela na Paz de Deus"[12] and "Mantenha a comunidade limpa"[13]. As desired, the residents begin to act as active participants in the construction of the Square and take ownership of the place. The "Praça Ecológica Vila Garibaldi"[14] becomes the "Projeto de Transformação Ativa Praça Ecológica Guaribal"[15]. Graffiti is absorbed as the visual identity of the Guaribal Community and determines the line of development of the visual identity project.

Fig. 8: Graffitis made by the community and design visual identity applications. Source: Varal Archives.

Fig. 9: Assembly of the identification plate of the seedlings in the community meeting of August and banner of indication of the dates of the community meetings in the square. Source: Varal Archives.

Fig. 10: Design steps used in presentations. Source: Varal Archives.

It seeks, from the methodologies employed, an understanding of the strategic devices and their implications, from the material results obtained through concrete records of their consequences. They are methods that become products of the articulations that the designer operates between its technical and experiential knowledge and the daily dynamics of the urban spaces where he works, with the cultural and community specificities.

The project

By project we are talking about all the resources that were used with the intention of transforming this place into a public space suited to the needs of the residents. The process presented here is based on three points of view that, prior to chronological ordering, structure project strategies in a more didactic format: solving the problems initially identified, methods of representing/communicating ideas and adapting to changes context.

The project starts from an initial stage of diagnosis that was elaborated from visits to the place and from conversations with the residents. This understanding of space and its problems are reflected in a set of maps that are presented in the first community meetings. Through the participation of residents and professionals of related areas (high performance landscaping, sanitary engineering, permaculture, environmental engineering, social technology), guidelines were developed for the project:

green infrastructure to deal with flooding and improve water quality;

permaculture solutions as an alternative for the treatment of domestic effluents.
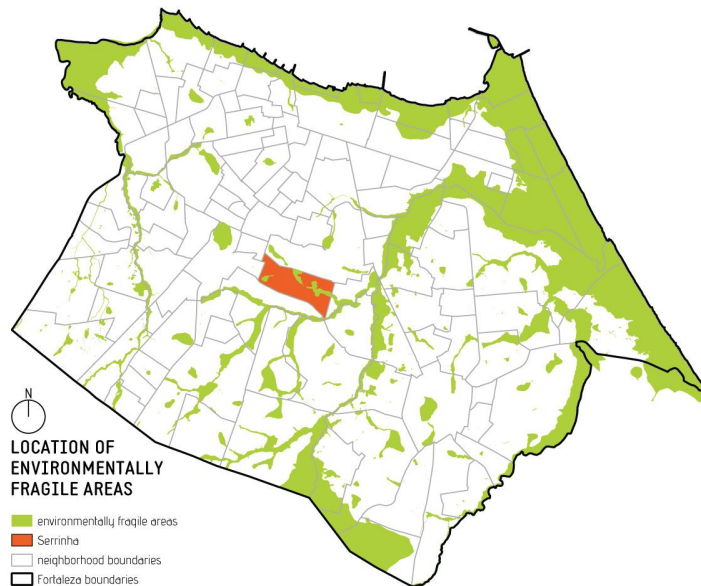
Fig. 11: Diagrams of the guidelines adopted for the project. Source: Varal Archives.

The process gains, over time, more participants with different roles, which requests a multiplicity of formats of representation for better communication. For the community the technical representation wasn't effective and photomontages and physical models were tested, which provide a relative understanding of the ideas elaborated. However, it is only from the local intervention made by the residents (the cleaning and installation of small soccer field, as mentioned in the previous point) that we understand that the representation isn't enough and that the direct alteration of the physical space becomes more efficient. From that point on, prioritizing modification actions, starting from a previous planning through design, is modified by reality and feedback the project, characterizing action research. In any case, technical collaborators and sectors of municipal government participate in the project, which maintains the importance of technical representations within the process.

The dynamics of intervention in reality conditions the incorporation of several contributions, which sometimes represent radical changes in the direction of the project. The first of these contributions comes with the already mentioned implementation of the soccer field by the community, equipment that wasn't foreseen in the initial versions of the project. Its design and implementation are incorporated through a rearrangement of activities and flows previously imagined. A subsequent donation of native tree seedlings by the public power becomes a strategy of separation between flows of pedestrians and vehicles and the size of the donated species conditions the design of its implantation. At the end of the project, the project moves through several sectors of the City Hall and, upon reaching the infrastructure sector, is invited to be incorporated into a drainage macro-project being developed for the area. With this, an urbanization project is demanded and developed that not only covers the area in question, but expands to the banks of the *Lagoa de Itaperaoba*. It is presented on-site to all involved, including representatives of the public power, through technical drawings, perspectives and animations.

Parallel to the community, the intervention actions are continued, such as the construction of furniture with reuse of tires and donated timber.

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Fig. 12: Project renderings showed in the final presentation. Source: Varal Archives.

Fig. 13: On the left, furniture built with the community. On the right, leisure equipment donated by the City Hall and inaugurated on the day of the final presentation. Source: Archives.

From the stitches to final touch

In the last days of 2015, the City Hall officially takes over the executive continuity of the project. On the same occasion, the UFC team delivers draft project of the square to the City Hall and the community and gives a closing in the works that involve his team. We know that the results are partial, that the process is continuous, and we believe that there will still be many threads to be woven. The performance period and the completed pre-project were previously established as criteria for permanence of the project in that place.

We bring as learning and experience for other projects the essential of the active participation of the communities with which it cooperates in processes of regeneration of the common space. Revealing to the community the problem it suffers in order to be co-responsible for its solution, results in a sufficient level of autonomy and urban sustainability. In the sewing of material, human and procedural aspects, it can be said that all the time, methods, techniques and tools are created from the meanings that those involved attribute and interpret through shared actions and constructions, in the same goal.

The university, especially the public one, has a commitment: to act and teach that the city is us. We have responsibilities over it. We need to do everything in our power to make the tangle align in a possible type of embroidery. We understand that the guiding thread of urban weave runs through very different realities: ours, the campus of the university, the Serrinha's inhabitants, the square. Intertwining spaces, human beings, actions and ways of living sewn together, is what we need to accomplish.

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1 Translators' note: Federal University of Ceará

2 Translator's note: Brazilian Institute of Geography and Statistics in free translation

3 Translator's note: Geo-environmental Diagnosis of Fortaleza in free translation

4 Translators' note: Local Plan of Housing of Social Interest in free translation

5 Translator's note: Research and Economic Strategy of Ceará in free translation

6 Translators' note: Sister Institute Giuliana Galli in free translation

7 Translators' note: Social Design Initiatives Laboratory

8 Translators' note: Pro Bono Office of Architecture and Urbanism

9 Translators' note: Garibaldi Village Ecological Square in free translation

10 Translators' note: Here may be in free translation

11 Translators' note: State University of Ceará in free translation

12 Translators' note: Guaribal and Favela in the peace of God.

13 Translators' note: Keep the community clean.

14 Translators' note: the first official name of the project. "Garibaldi Village Ecological Square" in free translation.

15 Translators' note: the new official name of the project. "Project for the Active Transformation Guaribal Ecological Square" in free translation.