

Usina – Work Center for a Habitable Environment

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Housing shortage has been part of Brazilian reality already for many decades and it has specially manifested itself in the biggest Brazilian city São Paulo. This lack of housing has persisted in a scale comparable with the interwar housing crisis in Europe. As a result Brazilian slums, so called *favelas*, occurred from the 1940s on as a side effect of an inflow of foreign capital to the country and construction of large factories in the major cities.

It is important to note that situation of the poor worsened severely during the military dictatorship (1964–1985) when problems of low income households were ignored by the government. As a response to this fact, housing movements started to form at the end of the 1970s with the goal to put forward poor housing conditions of growing part of the society. In cooperation with socially engaged architects and other professionals, they gradually developed a method of the housing production which was focused on the needs of future users and which encouraged collectivity. They were inspired by Uruguay housing cooperatives which produced a considerable part of housing and local public services during the 1960s and onwards.

This is how self-managed collective construction (*mutirão autogerido*) arose, financed from local governments budgets and administered by the community of future users with a help of technical auxiliary groups (*assessorias técnicas*) composed of architects, city planners, lawyers, sociologists, social workers etc. These groups supported self-organization mechanisms in the communities, made them understand technical aspects of housing production and civil construction, and encourage participation in the design process. Auxiliary groups had also become indispensable in negotiations with public authorities, as they could argue from the specialist point of view. Many of these auxiliary technical groups were formed in end of the 1980s and beginning of the 1990s when the idea of self-managed architecture gained support of then prefect of São Paulo Luiza Erundina.

One of these auxiliary groups is also Usina – Work Center for a Habitable Environment (*Centro de Trabalhos para o Ambiente Habitado*) based in São Paulo. It has been in operation since 1990 and has worked on tens of housing projects and other projects for social movements. Usina documented its work and presented it through films, publications and exhibitions. Usina members strive to apply non-hierarchic self-management (*autogestão*) also in internal running of the office and most of the decision is made collectively. Fourth generation of architects is already working for Usina but representatives of all generation including the founders are present in day-to-day working in the office. That guarantees continuity of the direction of the activity of Usina. It can be characterized as anti-capitalist and non-hierarchical, a practical construction of alternative to capitalist production

of city. I would like to show ways how Usina encourage self-management in communities and how they apply mitigation and adaptation strategies in their work on two selected projects, one from the 1990s and second more contemporary.

The first project is called União da Jata and is located at the East part of São Paulo. There is strong worker movement's history in the area. The site where the project stands is a part of larger plot where different social housing projects for 3000 families are placed. Authorities were pushed to declare it a zone dedicated to social housing by two massive land occupations (1988, 1990).

União da Jata is comprised of 20 four-floor apartment buildings for 160 families. Former community center became kindergarten with capacity of 60 children after the end of the construction. Library, rooms for education, chapel and community bakery were also established for the locals.

Usina took part in the process between 1994 and 1997 in cooperation with Landless Movement (*Movimento Sem-Terra Leste 1*). It was very important that the future inhabitants were pre-organized in so called Basic Ecclesial Communities (Latin American Liberation theology) and the housing movement. It eased participation in the design process, pressure to the local politicians, and self-management of the construction.

For Usina it was important to make architecture understandable, to invent methods how laymen can influence process of architectural designing which is otherwise esoteric for them. First meetings were organized where the families were asked what good and bad experiences they have from the place(s) they lived before and what collective equipment of the neighborhood they would prefer. From this starting point Usina took their primary guidelines for the project.

After some experimenting they also started to use models, even of life-size. The question was not "How should it look like?" but "How will it be used?". Families were asked to furnish model flats and comment on how they would use and divide the space. As a result three types of flats were defined with total area varying from 63 to 68 m² to meet different needs of the future inhabitants.

The architects promoted the idea of connecting kitchen and living room during the participation process to visually expand area of flat and approximate preparation of food and cleaning, traditionally placed in small separated room, to other activities of the household. For architects was important to preserve privacy of the families, so they composed the buildings in order to form small inner courts to prevent windows-to-window facing. They also placed some elevated garden beds with plants and bushes around the houses to make neighborhood more pleasant. One of the important principles to make inner climate of the building colder even without use of air-conditioning was a system of airholes at the façade to support draft of the air.

The construction method of the apartment buildings is self-supporting brick wall combined with steel stair towers which were placed to the site after laying foundations. The towers made construction process easier and safer for the workers when transporting the construction material and build upper floors. It also reinforced the construction of the buildings. Usina abandoned principle of pillar and beam because it is expensive and technically complex and also because it needs cladding which is costly and risky with tall and precarious scaffoldings.

It is also more practical for self-help construction (*mutirão*) which was carried out by future inhabitants on weekends, holidays and even after work. Housing movements opted for self-help construction, inspired by slums, for the reason of lack of funding from the state as it was the easiest way how to start the construction: occupy the land and persuade authorities to fund the rest of the project.

In the case of União da Jata, when people were fed up with waiting to the first installment, they simply built up the community center by themselves. But as João Marcos, one of the founders of Usina, says: “Mutirão is not an option, it is a lack of option to achieve self-management (*autogestão*).” Mutirantes, these who worked on self-help construction, were frustrated when there were “no buildings coming up from ground” after 16-hour shifts. Although some activists consider mutirão as a way to form community and empower inhabitants, other see it as a self-exploration, second job, by which future inhabitants spare money to the government which it would need to pay otherwise for social housing.

Usina put emphasis on the concept of housing in a broader sense than just flat itself. Together with housing movement they try to pursue setting up of communal facilities and its sustaining even after housing is finished. In União da Jata they helped to create communal bakery which employed young residents, trained them in the craft, provided jobs and supplied community with bread and other products. For some time there was also fruit and vegetable market for inhabitants. Kindergarten was set by families themselves, as there was no such facility in the whole part of city.

Location of this project is important. Housing movements in São Paulo have always stressed the problem of displacements of low-income residents to the margins of the city caused by uneven distribution of urban land and real estate speculations. Long distance from the periphery to the center causes overload in public transportation and road system. Urban infrastructure on the periphery is very poor – which again reinforces the necessity to travel to the center. Thus, for many housing movements, one of the key concepts is “right to the city”. The movements attempt to get construction plots nearer to the city center by land invasions, or by negotiation with the government. Communities are empowered to push the local government to provide basic services in the neighborhoods. The main objective for the

movements is a fully implemented urban reform which would allow to expropriate unused estates and plots, and regularize illegal settlements.

After União da Juta was finished, Usina continued to work on Juta Nova Esperança project, just next to the União da Juta. It was bigger project containing more than 500 flats.

Second project I would like to introduce here is Cinco de Dezembro e Tânia Maria situated in Suzano, an Eastern suburban district of São Paulo. The participatory design process was coordinated by Usina from 2010 to 2014.

Usina started again with conversation with the families supported by photos of different types of housing projects. The architects used again the principle of “lived-in” architecture. They used printed flat layouts of the final unit on metal desk, and magnets in the form of furniture and fittings. The families placed the magnets on the layout in the way they would like to furnish their apartment. In this way they inhabited the abstract space of the layout and gave architects a clue how the design should look like.

Subsequently, a discussion on common neighborhood spaces and facilities was initiated. The families called for small inner courts with greenery and benches, young people demanded a football pitch. The architects imagined an orchard at some of the green areas. Outside playground for children was planned together with an indoor space where they can play when weather is not good. In the ground floor of the apartment buildings, multipurpose room for events, free time and educational activities was designed. Community shops as community bakery planned there would create jobs for the unemployed ones, contribute to lower price for the inhabitants by paying rent, and it would connect neighborhood with the surrounding city.

In the course of participation process it came up that out of 120 families only 20 have a car. It was decided that parking plots will be reduced, and more space will be reserved for bikes and motorbikes. Usina propagated use of bicycles as way how to save up. The idea of car share was also discussed.

Among ecological aspects of the project, the architects pointed out in the project the reduction of concrete and steel use, and the preference of ceramics and local materials. They planned to employ re-use of grey water, and capture of rain water to the tanks placed on the roofs, common practice in the slums. On the roofs green gardens as free-time space for the residents were designed, and there should be solar panels to capture solar energy too. Usina intended to support natural ventilation of the interiors of the buildings and flats in the similar way as we saw in União da Juta.

Unfortunately, this project was slowed down in 2017, and stopped in 2018. It was due to adverse position of the local and later also the central governments which blocked financing of the project. At the same time the social movements were demobilized in

unfavorable political situation. Thus, we can see how dependent the self-managed housing construction is on the strength of the movements as it is fully grass-root attempt to build more dignified social housing and city space. Through 30 years history of Usina, there have been more favorable times for this type of construction and less favorable but the idea stays and the neighborhood are built up, even in the slower pace than state-driven social housing. How João Marcos said: "It is necessary for architects to have a vision of the future, to have faith in it. If you don't have it, you should better become a sociologist!"

The first project I presented was based on experimenting and finding out how to speak about architecture with the families, how to understand their needs and wishes and how to include them to the design process. In the second project, Usina applied these and other experiences from its long career, and applied elements of ecological architecture as climate crisis became more serious threat. This was felt during the droughts of 2014 and 2015 when SP almost ran out of drinking water.

Usina strive to merge social and ecological innovations. As in 1980s Czechoslovakia, they apply broader understanding of ecology – it also includes the quality of life for the people living in cities. That have direct and indirect impact on how we deal and how we care for the nature.