

INTEGRATED REHABILITATION OF THE HOUSING FROM THE 1950s. THE CASE OF THE NEIGHBORHOOD OF CARRANQUE (MALAGA)

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ABSTRACT

The neighborhood of Carranque was built in the 1950s under the precepts of the dictatorial model. In recent decades, it has suffered a continuous decline showing a completely degraded and especially decontextualized image from the XXI century city.

From the specific intervention project of this area of the city of Malaga, it makes a methodological to determine what should be the model for intervention in consolidated residential park, transcending the exclusivity of physical issues, to address the multiple dimensions involved is performed built in obsolescence park that is inherited.

This research article focuses on "the integrated urban regeneration" as a reflection about the intervention models in the consolidated residential areas. This goes beyond the exclusivity of the construction systems, studying the multiple dimensions involved in the obsolescence of many of our neighborhoods.

These buildings have conservation problems come from serious structural problems. These ones result from deficiencies in the current extremely poor foundation and construction solutions. Measures to improve the façade and roof, or the replacement of the windows are required due to the low energy efficiency measures required. But the ineffectiveness goes further. Housing models respond to the ideals of the 20th century Spanish dictatorial regime, away from the XXI century lifestyles.

Consequently, it is essential that the intervention must be able to resolve all these issues at the same time. Thus, the proposed rehabilitation of the foundation will require stabilize the load-bearing facade during the intervention at the same time. This leads us to think of using this fact and propose a fixed stabilization structure to solve the rest of the found pathologies: related to the structure, construction systems, accessibility, functional distribution, or energy.

In line with the above, the consolidation structure will support customizable modules that will assume duties like the family extension, the host of elderly, the pseudo-emancipation of young, the return of children or the division of spaces.

In this way, the buildings will adjust to each occupant needs. It attempts to answer to the hyperactive vibrating jelly, defined by Peter Sloterdijk, and which includes a society with disparate modes of life, away from the imposed lifestyle prototype.

To sum up, it is a comprehensive rehabilitation strategy that tries to resolve all the pathologies found (energy, construction, structural, accessibility, housing flexibility ...) in a global way to ensure the higher efficiency of this proposal.

Keywords: extension housing, energy efficiency, obsolescence, pathologies, comprehensive rehabilitation.

1. Introduction

1.1.- The multiple dimensions for a sustainable rehabilitation. The importance of everyday life.

This article is the result of an academic work that seeks to tackle the regeneration of neighborhoods which had become obsolete as a result of the dynamic model of expansive growth. The lack of investment has led to the absence of renewal in neighborhoods, like this one, which has a strategic position in their cities. (1) (2)

The purpose of this paper is the analysis of a particular model to apply a methodology of action that takes into account the multiplicity of approaches that are necessary for a sustainable rehabilitation of inherited housing stock.

The urban area has a multitude of dimensions (economic, social, environmental, heritage ...) which must be considered at different special and timing scales, alluding to the European Framework for Integrated Urban Regeneration, reference document for any intervention in the consolidated city. [3] [4]

Trying to simplify this situation in, more or less, objective data, takes us away from the dimension of citizens in their daily lives, forgetting that this is a complex reality in which social aspects play a role, beyond physical information.

Admittedly, this makes difficult and dilates action times, but it is firmly convinced of the need to avoid the same mistakes of the past century planning. The structure of this work is complex, because it tries to recognize this plurality. Its development has been a continuous feedback process. At time we was discovering the neighborhood, we have been adding new inputs to development the proposal. [5]

This may seem logical, but it seems not to be for urban interventions, which try to be a final and simple image in order to control everything. By contrast, the need to work on various topics in various scales and different depth is again stressed. Only if this kind of performances is assumed as an intervention strategy can cover a wider range of considerations in the complex reality of the already built.

It will be described various actions as the result of the review of these multiple dimensions for the case study, emphasizing on the main conclusion drawn: the social perspective as a fundamental architectural tool for the success of any intervention. The importance of considering how a site is lived has been a constraint forgotten in the process of rehabilitation, which certainly is crucial to intervene in it [6].

2.- The social dimension for a sustainable rehabilitation

2.1.- From the unique mode to multiple lifestyles

To understand the current residential typology, we must recover the historical context of the neighborhood construction. This should respond to a given mode of life, imposed by the Franco's regime, and adapted to a very specific ideology. At the same time, we must not forget the economic situation of that moment, when a country was been re-build with very limited resources. For this reason, it can be said that although there are several residential typologies, all respond to the same family prototype. [7]



Fig. 1 "Neighborhood of Carranque in Málaga". Source: Compiled by author.

Anyway, this is no different from the world architectural context. The architectural rationalism rose after World War II as a response to social needs and political changes which had happened in Europe. This promotes a housing standardization in order to achieve greater social welfare. But, do these minimum standards respond to multiple casuistry?

As it has been seen, this sort of neighborhoods has undergone a continual process of local appropriations, which is no more than the response of residents to their various lifestyles. It seemed logical to recognize this situation, which is a reflection of the need to adapt the original typologies to the characteristics of the XXI century features. Also, the strategy will get the *modus operandi* of the neighbors as one of the tools of the project, through local negotiation processes, which not impose previous conditions that will be rejected by citizen.

According to the current technological world, the houses of the XX century require a re-programming to adapt them to the changing needs of habitability the XXI century demands (Fig.1). It should respond infrastructure without great adaptability efforts give support to today's society. It is the concept defined by Peter Sloterdijk as *hyperactive vibrating jelly*, which encompasses a society of unstable horizontal networks to connect disparate lifestyles. These have deviated from the unique mode that it has been attempting to impose. [8]

This divergence between the content and container, leads to a series of imbalances in the lifestyle, which derive from a false ideal of imposed normality, and the impossibility of a free development of his stay. Besides, traditional housing imposes a false homogeneity in time, making impossible a full adaptation to different needs. The concerns that we have to change, lead us to some uncontrolled and excessive rehabilitation costs, due to the high stiffness of departure.

2.2.- Prior required sociability

Any work of architecture is made to be used for anyone and when that does not happen is a place with no name "... For example, a dress becomes really a dress only by being worn; a house which is uninhabited is indeed not really a house." [9]

Any intervention in the city should start by recognizing the plurality that characterizes the liquid modern society [10]. Hence, it is necessary, at least, to have the neighbors as a general principle, because no one knows the reality we live every day better than them. The contributions of neighbors show the fate that has led to a number of needs, setting priorities, and thus, the pace of the future performance.

For the case study, the initiative “Carranque Participa” was developed in collaboration with the neighborhood association in which it sought an analysis and subsequent diagnosis of the situation in the neighborhood, to be able to lay the basics for the renovation. (Fig. 2). Thus, it was determined that the structural problems are the main urgency, due to the incidents that are caused by them in their day to day. From this priority, the whole proposal has been articulated, including all the factors that have been discussed.



Fig 2 “Participation tools”. Fuente: Initiative “Participate Carranque”.

It aims to create the germ of a new local critical attitude about the situation of their neighborhood. It should be taken into consideration that the democratic evolution has resulted in an excessive delegation of power. This attitude makes citizen lose the status of group, limited to be mere consumers of urban options that are offered [11]. This is causing the transformation of popular neighborhoods in impersonal ones, which are characterized by the absence of activities that implies insecurity, individuality and marginality, in comparison to the quality of life that presents a cohesive and collaborative partnership [12]. Citizen demand a deep involvement with reality, and this should mean neglecting the individuality and personal interests to reach common interests, being part of a collective.

On the contrary, this change will become real, if it is carried out in all areas of society. This turn into important that professionals would assume their own responsibility, giving up the role of demiurge definitely, that is to say, one who makes decisions ignoring the physical and social reality, and whose adopted solution is invalid, going to a role of interpreter or manager of the matter which it will have to work.

Moreover, the designer cannot limit itself to be an outside observer to judge and decide based on rational knowledge. This must assume and "actor" role in the developing of the project, taking the risk which is associated to their direct involvement with the object that it will be transformed. This involvement determines a "responsible" answer defined by the ethical sense of it act. In short, it means an active position in shared processes that look and listen the current city.

2.3.- Response to the idiosyncrasies of the neighbors

In recent years, European architecture has left important examples of this kind of actions, which delve on concepts related to holistic thinking, and set long-term "strategic scenarios" with enough flexibility for innovation, adaptation and evolution. At the same time all of them must be integrated into a whole structure which must be implemented through specific and located actions in comparison to an individual intervention on objects and subjects. [13]



Fig. 3 “Traces of the appropriation process”. Source: Compiled by author.

It is important to note that although it attempts to establish an approximate methodology based on the study of this case, the solutions may not be common, but must reimburse particularities of each area. In this case, the district is marked by the continuous process of appropriation of those original free areas. Residents have been able to adapt primitive types to changing modes of life (Fig. 3).

As it defined by the Real Academia Española de la Lengua (*Academy of the Spanish Language*), we can define that opportunism is a specific way to respond to opportunities, which involves prioritizing short-term interests to achieve certain goals or resolve concerns shared by a group. In this sense, residents have undertaken a continuous process of appropriation of the original free areas to adapt the original fixed typologies to changing lifestyles.

This fact could not take in consideration, for example the simple demolition of these appropriations can be proposed to return to the morphological "alignment". Here it is taken as the object of the project. And if there is a prevailing reality in the neighborhood for any reason, it must be recognized and articulated with new rules, to respond to functional issues in comparison to an aesthetic decision. Undoubtedly, this action carries a very specific image, but it will be the result of the reply process to particular requirements (structural, functional, spatial, constructive, technical ...). In no case, it will be a previous imposed decision.

Based on the reinvention of opportunism in the neighborhood, it has been proposed respond to different ways of life of its residents. For this it has focused on tenants from a particular block, with all its implications: discovering the content and the container of their lifestyle, because only from knowledge, it is possible to propose them a new home.

3.- Intervention process

3.1.- Case studies

Among relating studied is significant to mention the actions carried out by the Municipal Society of Urban Rehabilitation of Zaragoza on 21 urban complexes, which were built between 1945 and 1965. Works carried out between 2001 and 2006, and have been aimed at balanced transformation of these pieces to foster improved conditions and quality of life of its neighbors. It is determined that the house has been the key element for this to be possible.

Considering only the different ways of intervening in buildings, the main objective was to achieve the standards set by the current legislation of public housing. To do this, the first thing was to undertake the structural adequacy by foundation stabilization and structural reinforcement of those buildings in worse condition. After the structural consolidation, the next step was to determine whether these minimum requirements obliged to a comprehensive restructuring. That would involve a change in the number of units or an increase of them by external growth. In this restructuring, the circulations for all homes were studied to be accessible with the installation of new elevators.

In addition to these, other measures were undertaken to ensure the requirements of health and safety against accidents, and the renewal of a poor facilities. Environmental sustainability measures were introduced and others to increase energy efficiency. So the buildings were equipped with enough insulation, introducing as far as possible design changes for better bioclimatic performance of buildings (Fig 4).



Fig. 4 "Building before and after rehabilitation". Source: S.M.R.U.Z.

In parallel, the State Housing Plan 2005-2008 allowed similar performances in other many cities throughout the national territory. This is the case of the rehabilitation of *La Ciudad de Los Angeles* in Madrid [15] or *San Martín de Porres* in Córdoba [16]. Although, they are smaller performances, meet the same standards, both in the analysis of their shortcomings as in developed measures.

On the same line, Lacaton & Vassal are developing similar actions on blocks of residential buildings constructed during the decades 60 and 70. These operations seek to expand the different dwellings, and renew their envelopes. Then, tenants can get better views, better sunlight and better lighting. With this the surface of the houses has increased between 15% -25%, giving to the building a more efficient skin. [17]

It is also possible to mention experiences that seek to exploit loopholes inherent to any legislation for the promotion of collective ownership. This is the case of the traveling installation *Rucksackhaus*, developed by artist Stefan Eberstadt [Fig.5] or subversive activities that are being conducted by Santiago Cirujeda with the collective *Recetas Urbanas* (Urban Recipes).



Fig. 5 "Rucksackhaus". Source: Stefan Eberstadt y a.k.a. Ingenieure

3.2.- Rehabilitation from technical constraints.

Returning to the error that would be the simple translation of these proposals, as a starting point, it is necessary to analyze the existing pathologies from different points of view: structure, construction, accessibility, function. Hence, it is essential that the approach of a rehabilitation strategy would be able to resolve these issues comprehensively in order to ensure an efficient intervention.

The actions will be based on the need for consolidation and structural underpinning, which come to solve the structural problems (Fig.6) that buildings are suffering. It is noteworthy that this consideration as a primary action to develop is the result of the analysis involved process and not a purely technical decision. The solution will

require the stabilization of the load-bearing walls. The solution proposed for foundation will require the stabilization of the load-bearing walls during the surgery. This leads us to think in using this circumstance to propose the stabilizing structure as a fixed element. This will help to solve other pathologies, as functional ones in this case.

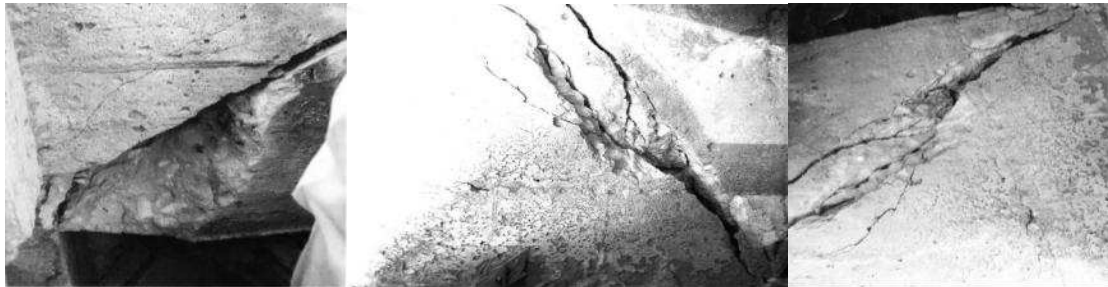


Fig. 6. "Deterioration of the building foundation". Source: Carranque Association

This idea underlies an important consideration in quest of sustainability. This is the search for maximum efficiency to a costly intervention. It looks for the maximum efficiency in a costly intervention, looking for the highest profitability. Accordingly, we use this measure to improve accessibility issues, to get higher energy efficiency or to support future expansions.

If this new crunched is thought as a twilight threshold before homes, the solar incidence on them will be reduced. As a thermal regulator, it will help to offset the serious shortcomings that these buildings have, according to the comfort and interior fittings. This feature is common to buildings of this kind, since they will be inherent in the systems and construction techniques used during this period of time, and the low quality of materials in a post-war time.

For this reason, it is advisable to refer to the measures set by the guide of recommendations for improving the energy efficiency of existing buildings of the Institute for Diversification and Saving of Energy. Its objective involves providing a parallel application to energy certification, to identify and evaluate different measures of savings. Among these, in a construction level it is important to increase the thermal insulation of the current facade. From the mentioned social perspective, it is essential that if the outer skin is not going to be similar to the current one, a collective image should be agreed among neighbors to avoid a rejection action.

One of the weaknesses of the envelope is the treatment of window openings. The highest energy loss through the facade due to bad weather conditions occurs through these openings. Subsequently, it is necessary to analyze this part in any rehabilitation project. On one hand energy losses through windows should be limited, paying special attention to the treatment of thermal discontinuities, and the type of frames that have been used. On the other hand, introducing sunlight into the inner space through the windows may be a good passive mean of thermal control in winter. In this respect it may be interesting to design floor-to-ceiling windows to increase the lighting surface.

Another common problem in this kind of interventions is the poor condition of facilities, largely due to the passage of time and the absence of a comprehensive project to improve the set of facilities (Fig. 7). It is common that partial projects to improve these facilities have been carried out, showing a huge variety of pipes, cables, and other supply or sanitation systems running along the facades of buildings. Likewise, the fittings of indoor spaces without air conditioning, has resulted in the placement of condensers along the building front.



Fig. 7 “Current situation of the building facilities”. Compiled by author.

For its part, the analysis of the efficiency of these facilities, especially the generation of hot water, shows the need to carry out active measures to reduce energy consumption. So, there will be necessary to centralize HVAC and hot water systems with individual solar panels for each dwelling.

3.1. Rehabilitation from habitability.

After having regard to technical factors that will affect any intervention, the following is to determine the spatial needs that require the neighbors of a specific building. Thus, it will be possible to adapt its rehabilitation to the various types of families that are living in the building at this moment, and are quite different from the family model that Franco’s regime wanted to impose within that context [18] [19].

Cases like that one, where structural deficiencies require significant consolidation intervention, suggest that this measure can be used to solve those detected housing conditions. Thus, this consolidation may support new "plug-in's" to activate each of the existing buildings, as long as the maximum load hypothesis would be determined.



Fig. 8 “Adaptation to multiple lifestyles”. Source: Compiled by author

Thus, these will allow them increasing the family, hosting grandparents or returning sons, getting teenagers’ independence, the pseudo-emancipation of young, or the segregation of spaces in housing where elders are living alone... Buildings will readjust to each occupant’s need, expressing on the building elevations and therefore, with the possibility that each person can identify their housing place. It’s no detriment to a collective game rules, which are necessary for communal living and good understanding as a group. (Fig. 8)

It should comment that in comparison to the analyzed study cases, this methodology assumes unfinished as their own any work of this nature, so that its construction should seek standardized solutions and modulated, enabling the assembly of its components. The expansion modules acquire the status of progressive construction elements. For this, a catalogue of solutions will be defined so that residents acquire either model according to their needs.

As it has been detected, these neighborhoods, even though they were built in pursuit of their community, have turned to the impersonal in recent decades, mainly motivated by the lack of space to represent them collectively. It is important to recover lost awareness of neighborhood unit, and it is therefore necessary to provide spaces for interaction and coexistence in both the city and within buildings. Only if the *socio-spatial processes* are taken into account, it will be articulate the ordinary, the visible and the open that form the basis of any collective. [20]

And therein lies another of the measures proposed in the present case: recovering covers for a collective utility. It aims to exploit the structural intervention to have small gardens for recreation. On the one hand, this responds to a claim of orders that are originally from a rural area. On the other hand, it will positively impact on the overall energy efficiency of the building. It re-emphasizes the concept of efficiency in this type of intervention to resolve jointly several deficiencies founded.

4.- Conclusions

The approach to the rehabilitation of buildings from understanding the multiple dimensions those affect and determine their degree of obsolescence, sees that it will be difficult to rely on the ability of the finish, fully defined and delimited, to intervene in them.

Undoubtedly such actions carry with them a very specific image, but the point is that these must be the result of a process to reply to certain requirements (structural, functional, spatial, constructive, technical ...) and not a decision imposed a priori. If we assume that for the case study and the rest of referents that have been analyzed, they cannot be taken as a prototype to repeat in form or specific content. They pretend to get a flexible result, an open system with capacity for change.

Therefore, it is concluded that the actions described are just the epitome of a series of best practices, which are based on the following maximum two:

- Any intervention on inhabited buildings shall recognize the diversity that defines today's liquid society. Therefore, it will be necessary to assume the neighbors as the object of the project, considering that nobody knows the reality we live every day better than them.
- The complexity must be tackled from a global strategy that hybridizes the particular considerations of the different dimensions that affect these interventions. It should build a whole scenario in which various pathologies were addressed together and not independently, looking for the most efficient intervention possible.

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