

Housing in the first periphery of Barcelona: Towards the finding of criteria for urban renewal

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Abstract

During the mid XXth century the former outskirts of Barcelona was the field of an unprecedented urbanization process addressed to housing purposes. A very heterogeneous system of settlements occupied the steep hillsides of Tres Turons and Collserola. These former deprived residential suburbs became, in less than twenty years, fully urban neighbourhoods with extreme densities and urgent needs. From beginning the 80' to our days "Barcelona on slope" has become the conceptual and physical frame for urban renewal policies. Although there's still much to do, the large amount of accomplished plans and actions calls for an evaluation and a synthesis from which probable criteria for future actions can be inferred.

Keywords: Barcelona, Urban Renewal, Housing Estates, Informal Housing.

Unplanned Barcelona

The Eixample Cerdà in Barcelona is worldwide known as a paradigm of modern-planned city. Despite its conceptual clearness, the pattern didn't succeed in urbanizing some areas of the so called "Pla de Barcelona". The foothill of Collserola and the middle hills of Tres Turons were so steep that they were set apart from an erudite project such as Eixample Cerdà. Instead of it, they became the first periphery of Barcelona, the result of non-planned urban processes. During the XIXth and the first half of the XXth century nothing prevented the low income and immigrant population from building their informal slums on this non-regulated territory. Illegal plots were rapidly developed without considering essential urban infrastructure. This process of informal urbanization resulted into a first "periphery on slope" of the city, which was physically contiguous to the Eixample but discontinuous to it in terms of urban quality. Demands for urban renewal and social justice have been explicitly expressed by dwellers since then.



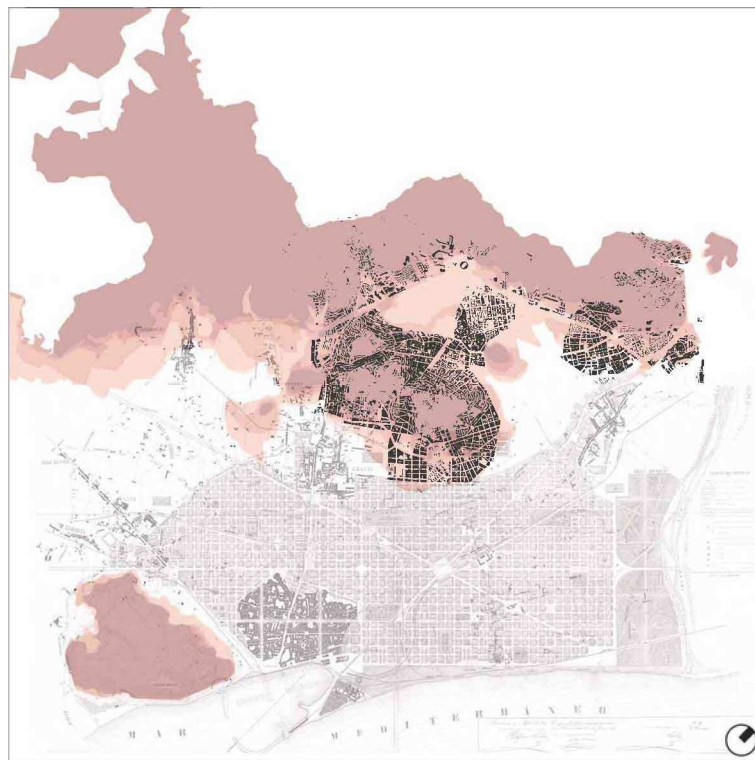
More recently, in 2009, a common approach to all neighbourhoods on slope appeared to be necessary, since the lack of "Barcelona standard urban conditions" was more and more obvious. The Planning Department of the city commissioned the "Strategic Plan for Neighborhoods on Slope" to the authors of this paper. The Plan proposes a morphological approach and tries to point out relations between social problems and morphological deficiencies. The main research lines of the Plan are:

- Mixed and collective uses of civic sphere.
- Urban fabric, architecture, residential typologies and socio-demographic disjunctions. Basic living conditions.
- Accessibility and integration in the metropolitan net of flows.

The Plan not only analyses Barcelona's steep periphery but provides some strategies and criteria for the refurbishing of these former suburban peripheries which, today, are contemporary fully urban environments.

Urbanizing the periphery: 1929-80. Five reasons for housing deprivation

Figure 1. Informal settlements on steep ground (black) in relation with the Extension Plan for the City of Barcelona –Eixample- of 1859 (light grey).

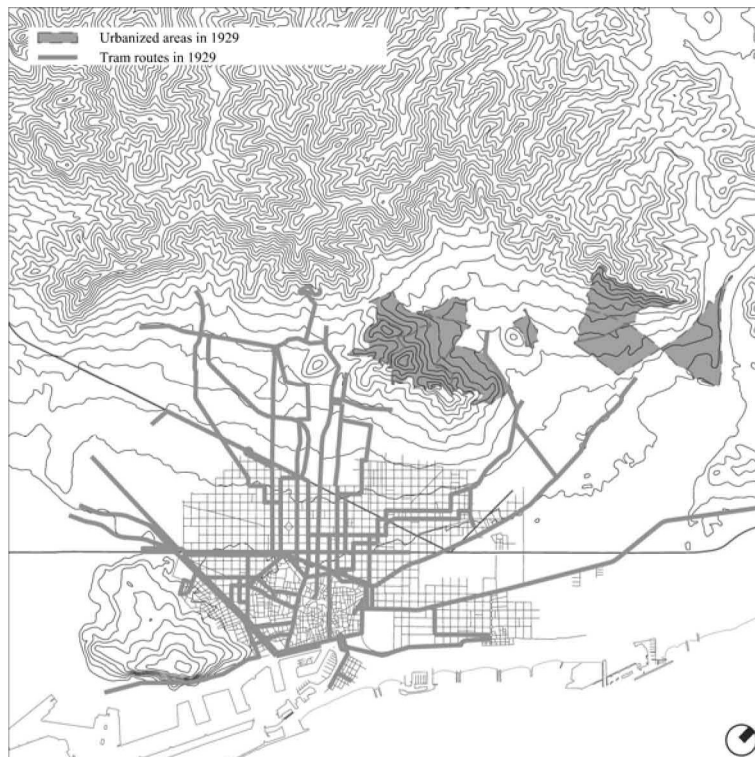


The layout of the Eixample Cerdà, despite its high rationality, did not accommodate the entire city's urban growth. The Plan was implemented by entities capable to assume, due to their technical and economic competence, this complex process of urbanization. Simultaneously an early informal process of land occupation and urbanization took place on the steep hills of el Carmel. This is a particular unregulated urban form in which housing construction happens even before the most basic infrastructure is urbanized¹. During this first informal occupation several uses coexist simultaneously: agricultural exploitations, bourgeoisie weekend houses and emerging informal settlements addressed to host the first great migration flow of the 1920s. Since the intensity of land-use is moderate in the

beginning, the existing infrastructure (roads and canals) is enough to support it. However, a new culture of land occupation is for the first time established, determining the urban future of this part of the city. The main characteristics of this new culture are: autonomous management of fragments lacking of a general order, a road pattern very poorly related with topography and the lack of any public space strategy. That will be the context in which an increasingly dense city will be consolidated. After the Spanish Civil War and up to the 70' these early urban fragments are consolidated and densified by increasing processes of parcel division and typological changeⁱⁱ. Simultaneously, and especially in the 1950s and 1960s, the Public Administration undertook a policy of social housing to address the need of a shelter for an important amount of immigrants. A number of housing estates that have quite different conditions of informal occupation are built from the early 1950s up to the late 1970s. They are operations where urbanization and housing construction occur simultaneously. Although these estates are not very well integrated in the territory and sometimes are not easily accessible, minimum healthy living conditions and a balanced standard of public space and facilities are assured.

Barcelona on slope is, therefore, a territory where a fragmented and uneven occupation will accommodate much of the residential fabric of XXth century Barcelonaⁱⁱⁱ. This part of the city has been identified over time as the first periphery of the city, an area with obvious urban and housing deficiencies. We will see how many of these urban lacks derive precisely from the process of occupation and urbanization of the territory. We will consider not only morphological conditions (those focused on physical form) but also temporal process-related and socio-economic context. The topographic restitution done by Vicenç Martorell in 1929 shows the incipient urbanization of the first periphery (figure 2). Two of the characteristics of these early settlements are shown on the chart: On one hand this first urbanization process occurs in areas with significant slope; on the other hand, the relative position of these settlements is very distant from the city centre. These two conditions will determine the future of these areas and will condemn them as slums with huge deficiencies.

Figure 2. Urbanized settlements on steep grounds according to Vicenç Martorell's restitution in 1929.

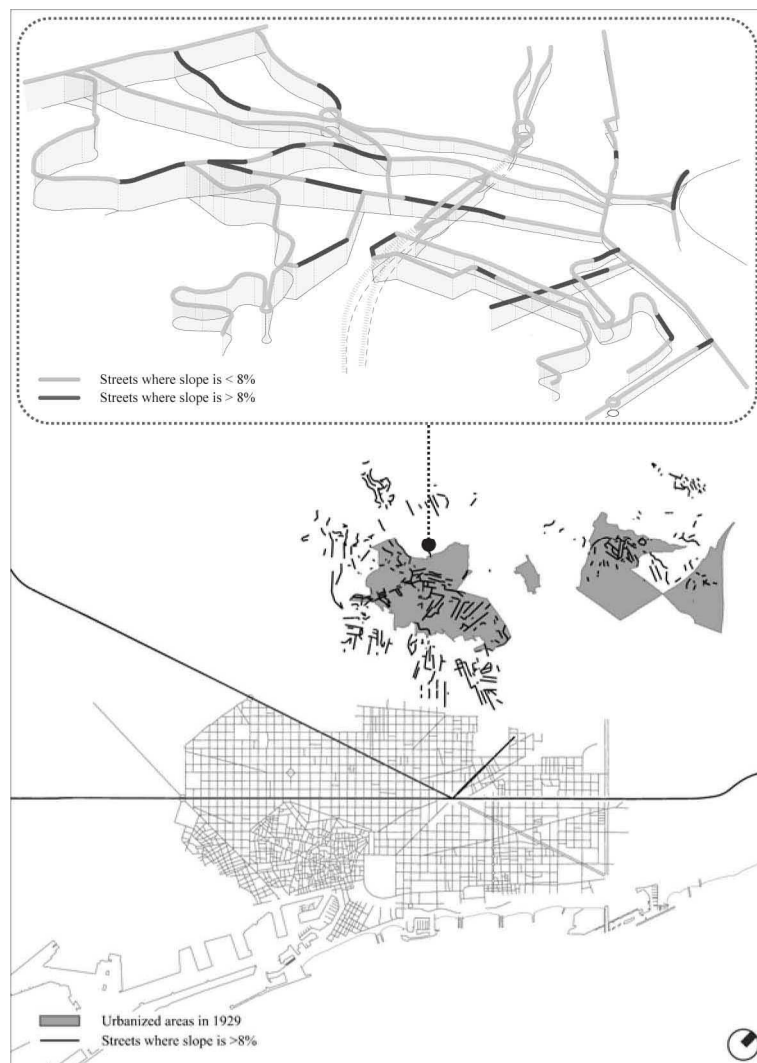


Weak infrastructure

One of the most obvious lacks of these neighbourhoods is the inability of the road infrastructure to serve an extremely dense residential fabric. The reasons for it are its very conflictive relation with the original topography and the tiny percentage of street surface in relation to total area.

During the early years of urbanization in the eastern side of Barcelona some extensive agricultural uses still remain. The ancient villages of Sant Andreu and Horta are, still in the first XXth century, basing part of its economy in agriculture. Therefore, the first informal housing developments are settled on hills on slope, where agriculture was not possible and, consequently, the land prize was low. Figure 3 shows a synthetic three-dimensional restitution of el Carmel street pattern. It can be seen that some streets, being originally traced according to topography, present a substantially flat profile – Pedrell, Gran Vista-. On the contrary, most of the streets, resulting from a new development process, are more than 10-12% steep. This street morphology will impact decisively on the living conditions in these neighbourhoods: not only the mobility of the residents is affected, but the living conditions of dwelling are severely diminished. The sitting of architecture necessarily requires specific solutions that frequently compromise the minimum conditions of salubriousness.

Figure 3. Urbanized area in 1929 related to steep streets in the first periphery. On top, tridimensional restitution of street pattern in El Carmel.



Regarding the tiny proportion of street surface it should be clarified that the ratio between open space and built environment is unequal, depending on the urban form we are considering (figure 5). Informal urbanizations are, on one hand, unplanned settlements. The only criteria for the tracing road project are purely functional: providing access, however minimal, to the buildings is the only objective to achieve. There is no public space project, nor street nor square, where the civic dimension of the new development occurs. The same can be stated for housing estates: The developers were aware of the deficit of public space in informal urbanization and, therefore, the projects remarkably increased the ratio of unoccupied space. But they did it from a strictly functional logic. The road scheme accomplished the assignment of providing access to the building in a reasonably efficient way but the resulting public space had no formal control and clear management criteria. Moreover, the basic urbanization was never completed at the time the first residents occupied their new homes.

Figure 4. Specific sections (located in plant) defining basic parameters of urban form regulation such as bulk, number of stories and ground level. Source: PERI (Urban Renewal Special Plan) of Roquetes, 1980.

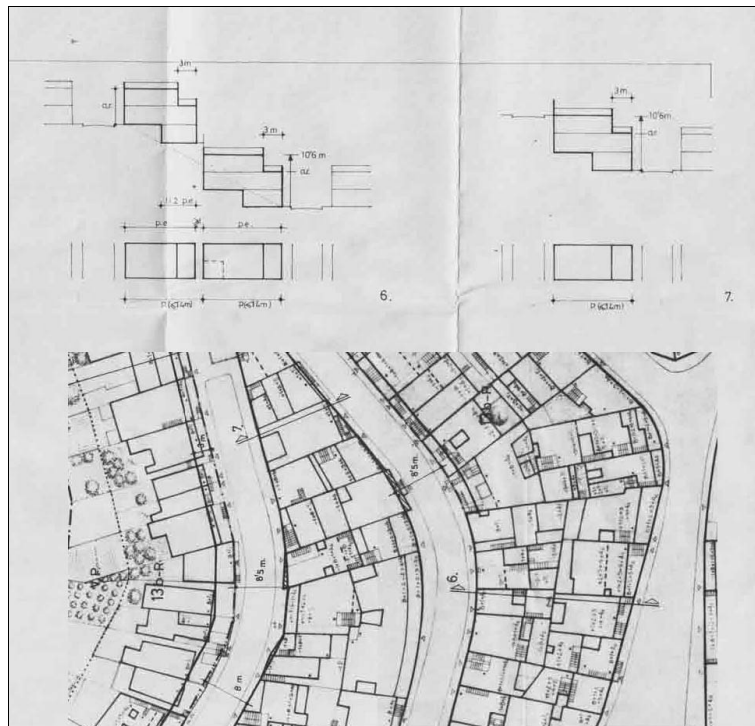
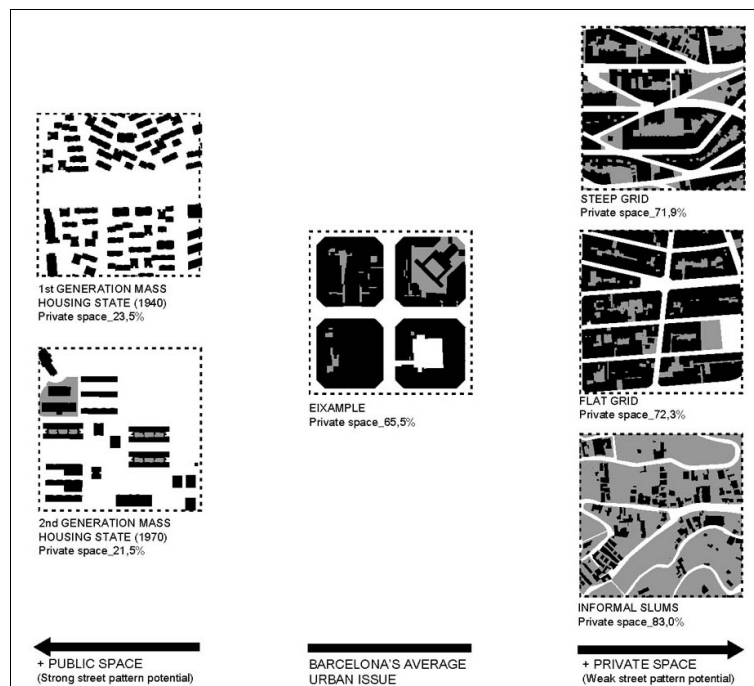


Figure 5. Urban Fabric categories related to public space ratio.



It can be concluded then that, even when there are quantitative differences between housing states and marginal developments regarding the road system, there is in all of them a depreciation of the street as a cohesive element of public space and, therefore, as a way to enhance the collective space for inhabitants. The contemporary urban renewal operations will consider the qualitative improvement of public space as one of its most outstanding commitments.

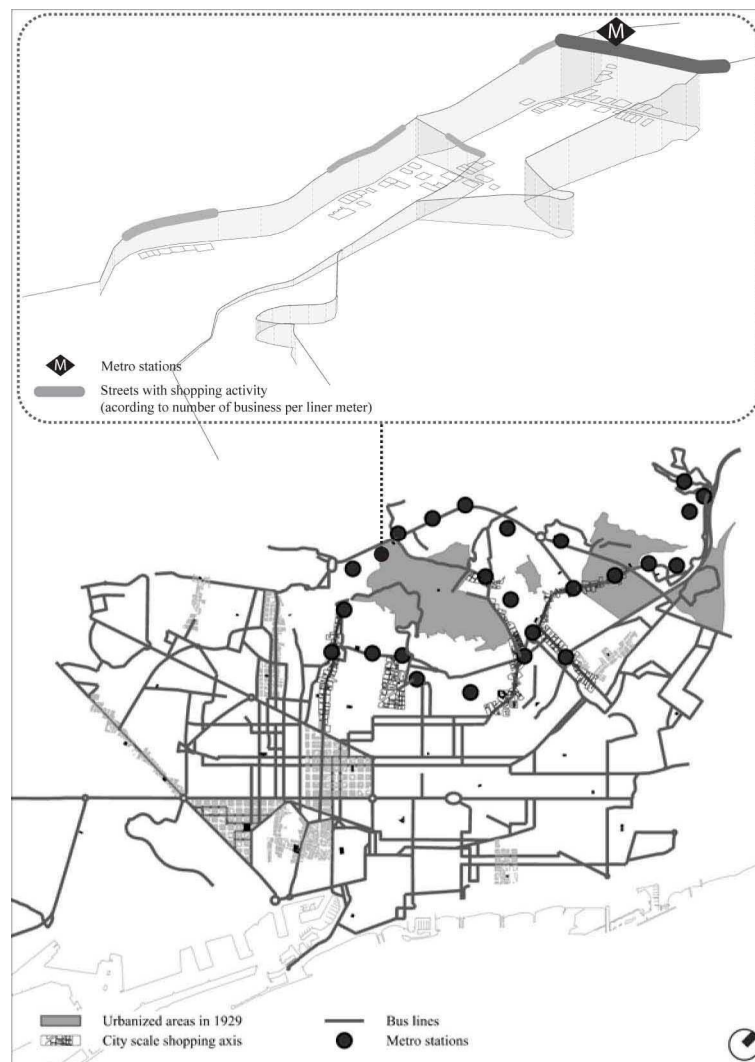
Functional isolation

Barcelona on slope has historically been marginalized from the functional structure of metropolitan public transportation system. This isolated position has hindered its capability to host different uses and activities.

Figure 2 shows the basic road network and public transport in 1929. Unlike the western sector of the city, connected to the city center through the Diagonal Avenue, the eastern sector is not easily accessible: the foothills of the Tres Turons and the railway line to France are impassable barriers that enclose the newly urbanized settlements. The only road that connects this area with the central city is Paseo Maragall, since the Meridiana Avenue is not yet opened in 1929. On the other hand, the network of trams that had been built since the nineteenth century mainly promoted the relationship of the central city with the former town of Gracia. In the north-eastern sector, where car ownership rates were very low compared to the western sector, public transport facilities were very scarce. Therefore, Barcelona will face from the 1920s to the 1970s a very intense urbanization without an appropriate accessibility. The new neighbourhoods will, in some cases, remain until the first 1990s as very distant settlements and poorly connected by public transport. That is the case of Trinitat Vella and Roquetes. In other cases as El Carmel, Teixonera, El Coll or Font d'en Fargas the distance is shorter. However, these settlements are located on the north and shadowy side of the Tres Turons, a series of hills that become a barrier and condemn these neighbourhoods to a certain marginalization. Due to the difficult relation with the city they were consolidated until the early 1980s as monofunctional spaces for low-income population housing. Uses and activities depending on metropolitan accessibility -such as city-scale shopping or facilities- are hardly found in this area of the city. Consolidated urban shopping axes are drawn in figure 6^{iv}. It is evidently shown that shops, business and activities are sited along major

channels of public transport, main roads with several bus lines or subway stops that offer high accessibility. Excepting Via Julia these civic axes have been consolidated over time along ancient roads which, invariably from the first settlements until today, have been the main traces of territorial communication. Via Julia, on the contrary, is an exceptional recent invention. Being a strong shopping hub of urbanity, it emerged from a firm policy of public transport implementation carried out in the early 80's. The recent policies in Nou Barris, more extensively explained in "Completing the neighbourhoods: 1980-2011. Nou Barris as paradigm.", can hardly be understood without the urbanization of Via Julia.

Figure 6. Public transportation system in 2010 related with main urban shopping axes in Barcelona on slope. Shopping activity is necessarily served by public transportation system. Urbanized areas in 1929 appear in light grey. On top, tridimensional restitution of El Coll, where shopping activity is clearly located next to the metro station.



Social enclosure

Migration

Together with the historic city centre, the neighbourhoods on slope have become specialized receptors of immigration, a social phenomenon which happened to be especially intense during two different

moments. The first immigration flow, coming from the rest of the Spanish State, occurred after the Spanish Civil War and during the industrialization of the 1950s. A second particularly significant moment occurred with the arrival of immigration from non EU countries during the 1990s and early 2000s. Despite their specificities, these two migratory flows mean a single challenge: the need to carry on some specific social integration policies in these neighbourhoods.

The process of occupation and urbanization of steep plots can only be understood intimately related with the first immigration flow. The Universal exhibition of 1929 and, specially, the incipient industrialization of the city which took place from the 1950s meant the arrival of a number of rural workers from the rest of Spain. As shown in figures 7 and 8, this new population found housing in the first suburbs of the city. Figure 7 shows synthetically the occupation of the city in 1962. The existing informal settlements in 1929 are by then extended with new marginal developments such as Torre Baró and Sant Genis. Simultaneously, the acute need of housing has already been translated into mass housing promotions undertaken by the Public Administration. That is the case of Montbau, Guineueta and Verdum.

Figure 7. Urbanized areas in 1962. New settlements still find location over areas with high slope. Many of them are promoted by Public Administration with an increase of up to ten times the original density of informal slums of the 1920s.

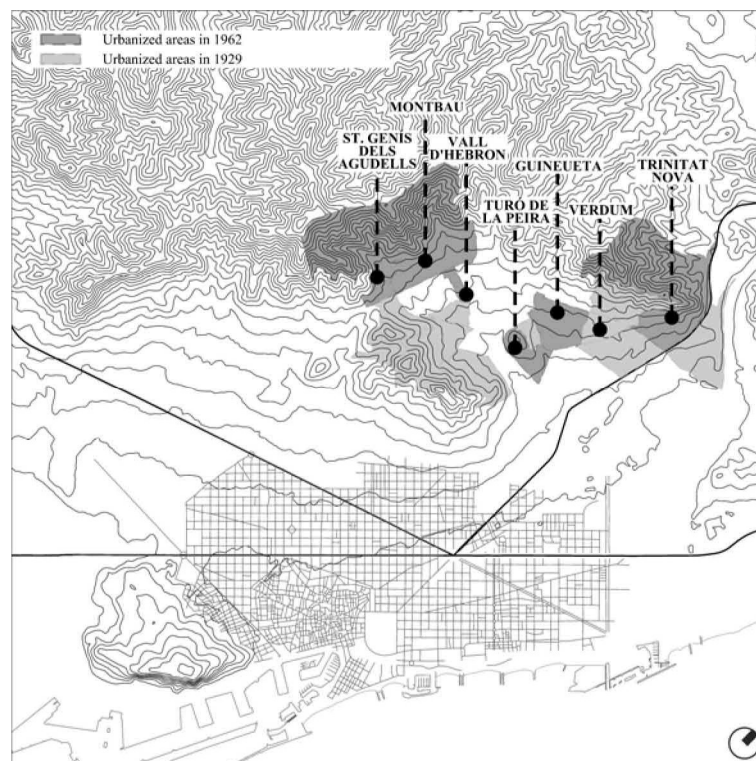


Figure 8 explores the relations between social structure and the first flow of immigration. The neighbourhoods with intense inner-state immigration (1960s) are mapped in dark grey. Today the percentage of population aged over 65 years and born in Spain (excluding Catalonia) is in these areas higher than in the rest of the city. While this percentage is an average of 47.3%, in neighbourhoods such as Caramel, Teixonera, Trinitat Vella, Torre Baró or Roquetes the ratio is well above 80%. Occupied plots (figure 7) and inner-immigration destination (figure 8) overlap perfectly.

Figure 8. Migration flows destination in the city. Coloured areas are those with a percentage of immigrant population over the average of the city.



Source: Barcelona Municipal Institute of Statistics

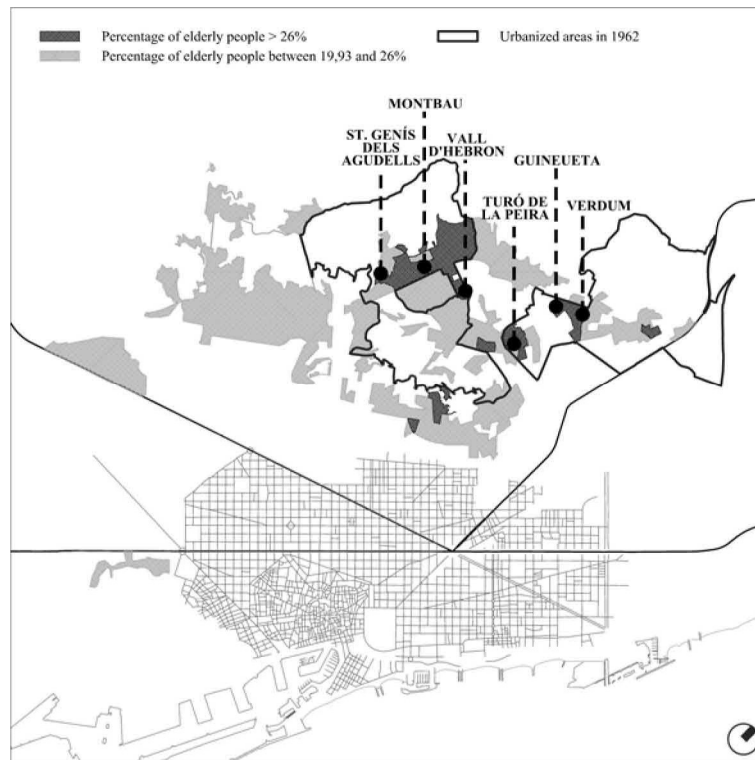
More recently, a second phenomenon of mass immigration from non EU-countries took place in Barcelona. Figure 8 shows in light grey those districts where the percentage of young people born outside the European community is higher than the average of city. This second flow of immigrant population arrived mainly to two areas of the city: the old city centre and the first periphery this paper is focused on. A cross-reading between the immigration of 1950s-1960s and the second flow of the 1990s proves that the neighbourhoods on slope have been specialized destination for migrants in Barcelona.

We can conclude, therefore, that some of the neighbourhoods of the first Barcelona's periphery have repeatedly assumed the role of spaces for the landing of immigrant population (figure 8 in black). This could mean a certain risk of marginalization, since the scarce financial means and the lack belonging to the place are factors of social exclusion. Thus, urban policies in these areas should consider the specific programming of collective facilities, able to manage these initially unfavourable conditions.

Ageing population

Figure 7 marks the social housing operations promoted by the National Housing Institute between 1950 and 1960. The difference between housing estates and informal slums of the first periphery is how quickly the estates were built and occupied. As for the rest of urban tissues the access to a home by dwellers occurs gradually and deferred all along more than forty years, housing estates are suddenly occupied by young families. Therefore, the resident population is characterized by a remarkable homogeneity. After 60 years since its construction, the generational replacement in these neighbourhoods is still to come and the aging index of population is higher than the rest of the city of Barcelona (figure 9). Guineueta, Verdum, Montbau, Turó de la Peira and Can Baró are neighbourhoods with a higher aging index than Barcelona's average. All of them are formed by unitarian housing estates operations and where occupied by young families in a very brief period of time.

Figure 9. Percentage of elderly population in the first periphery (2010). The most aged areas are the housing estates built during the 1950s-1960s.



Source: Barcelona Municipal Institute of Statistics

Inadequate dwelling stock

The provision of housing for the working class is, as seen, the main reason of the development of what we have agreed to name as the first suburbs of Barcelona. The urgent way in which this territory is occupied produces, in most cases, a deficient housing stock, unable to accomplish the minimum standards of habitability. The early appearance of physical pathologies in some of these groups warned soon about the necessity to renew some estates which, on the other hand, were extremely dense.

Urban Scale: Density

In the early 1980s Barcelona's urban periphery is fully occupied (figure 10). During the 1960s and 1970s the urban history of this area of the city is characterized by two processes with one common feature: extreme density.

Figure 10. Urbanized areas in 1980.

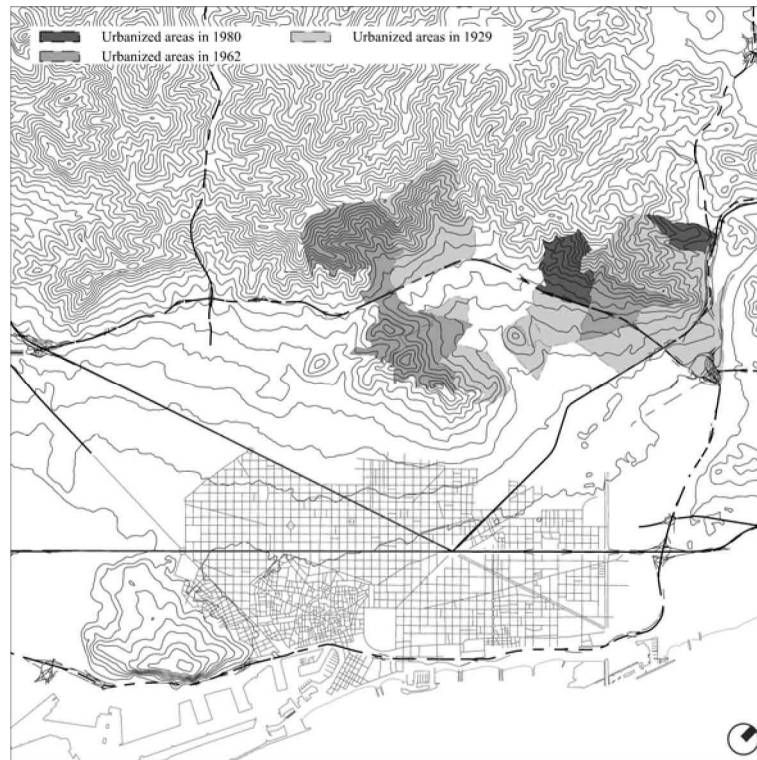


Table 1. Density (dwelling units per ha.) in the first periphery. The housing estates built during the 1950s and 1960s remarkably increase the density in comparison with informal housing of the 1920s. Despite that, extreme density is reached in informal neighborhoods after densification from the 1940s to the late 1970s.

Building year	Name	Density
1929	Roquetes (*)	36
1930	El Carmel (**)	30
1952	Verdum	302
1956	Turó de la Peira	203
1960	Montbau	119
1962	Guineueta	110
1969	Vall d'Hebron	155
1973	Canyelles	112
1980	Roquetes after informal densification (*)	329
1980	El Carmel after informal densification (**)	355

Sources: (*) Carracedo, O; Sotoca, A.: Op. cit. (**)Martin, A.: Op. cit. All the rest data taken from Ferrer, A. Op.cit.

The first process is the construction of massive housing estates the density of which is extremely high in relation to the rest of the neighbouring urban tissues previously urbanized. The second one is the gradual densification of Carmel, Roquetes and Teixonera. During the 1950s and 1960s the plot structure of these urban tissues is gradually subdivided and, consequently, the density is increased

resulting in a new property structure with many conflicts and management difficulties. At the same time the dominant building type in these areas varies from being the single-family house to become the multi-storey building of apartments^{vi}. The result of both processes is an increasing pressure on the street pattern, originally dimensioned for a specific urban fabric that may not correspond with the newly densified urban fabric.

Figure 11. Density (dwelling units per ha.) in Barcelona on slope. The most extreme areas are the informal slums of the 1920s with a density over three times the average density of the city.



Source: Barcelona Municipal Institute of Statistics

The impact that both processes have on the city is diverse, as shown in figure 11. The settlements with a higher density are precisely the densified informal tissues. On the contrary, the second-generation housing estates, even though their densities are higher than the Barcelona's average, have better conditions: the proportion of public space is much more generous than in informal tissues, as shown in figure 5.

Architectural Scale: Obsolescence

Many of the neighbourhoods in the first periphery did not meet the constructive quality necessary to endure beyond the first fifty years of service. Several pathologies, from structural to thermal insulation, emerged in recent years. Furthermore, contemporary standards for habitability require a

minimum apartment size that most of the 1950s housing units don't accomplish. Therefore replacing some of the buildings of these estates seems to be more than necessary.

In some cases the renewal projects has been focused on the replacement of certain buildings by others of undeniable better conditions. This strategy is very common for many renewal areas in Barcelona^{vii} and, without any doubt, it has meant a better habitability of the architectural space. However, the improvement understood in its broadest sense, that is to say in urban and social scale, requires more ambitious actions which go beyond the architectural object and consider other aspects of the experience of living in the city. Also, with this level of ambition, we found out experiences that have addressed the improvement of residential space in the first Barcelona's periphery. Many of them have been carried out in the Nou Barris district.

Completing the neighbourhoods: 1980-2011. Nou Barris as paradigm.

Nou Barris is a working-class district situated in the north-east area of the city. Mainly consolidated in the second half of the XXth century it is formed by an agglomeration of several neighbourhoods (the English translation to Nou Barris is "Nine Neighbourhoods") with specific and very diverse urban morphologies.

Due to its contemporary history, Nou Barris, final destination for an important part of working immigrants who arrived to Barcelona in the 1950s and 1960s, has become a territory with a remarkable morphological diversity, the result a fragmented and unplanned growth. The upper end of the district, strictly conditioned by metropolitan infrastructures and very steep topography, is occupied by the neighbourhoods of Ciutat Meridiana, Torre Baró and Vallbona. The rest of the district is formed by the most populated neighbourhoods, such as Prosperitat, Porta, Guineueta, Roquetes and Turó de la Peira. Although the topography is gentler in these areas, they are still settled on very steep land. In 1979, when first democratic councils were established, all neighbourhoods in Nou Barris met the unfavourable conditions described in "Urbanizing the periphery: 1929-80. Five reasons for housing deprivation": they were housing environments with huge deficits of public space, functionally isolated, socially enclosed and with serious physical deficiencies in some of their housing stock.

In 1984 Nou Barris becomes an administrative District with a certain self-autonomy urban managing. It is from this point that the local government undertook a series of actions which aimed the improvement of urban space and the dignifying of the first suburbs of Barcelona. Under the ideal of "monumentalize the periphery" a new strategy, mainly focused on public space, was initiated. The refurbishment of public space was intensified during the pre-Olympic period and has lasted until today. Nou Barris becomes, in this context, an excellent laboratory for this urban policy, since its precarious urban space called for urgent actions. Having been completed most of the main interventions planned in the district, and considering the recent political shift in the City Council of Barcelona, it can be said that an era in the city's urban policies has come to its end. We will evaluate the results and will infer some criteria for future interventions in areas of the city where the renewing of housing neighbourhoods is still to be undertaken.

The interventions in Nou Barris have addressed to four major objectives: public space improvement, collective facilities programming, public transportation accessibility and basic dwelling conditions achievement.

Reinforcing infrastructure through public space

As mentioned, Nou Barris is the hasty result of fragmented urban tissues that were settled without an overall coherent and structural layout. All public space refurbishment interventions and, especially those addressed to the strengthening of civic linear axes, had the common goal of ensuring cohesion between urban fragments. Thus, public space was scoped from both city and local scales.

A city-scale civic axis: Via Julia

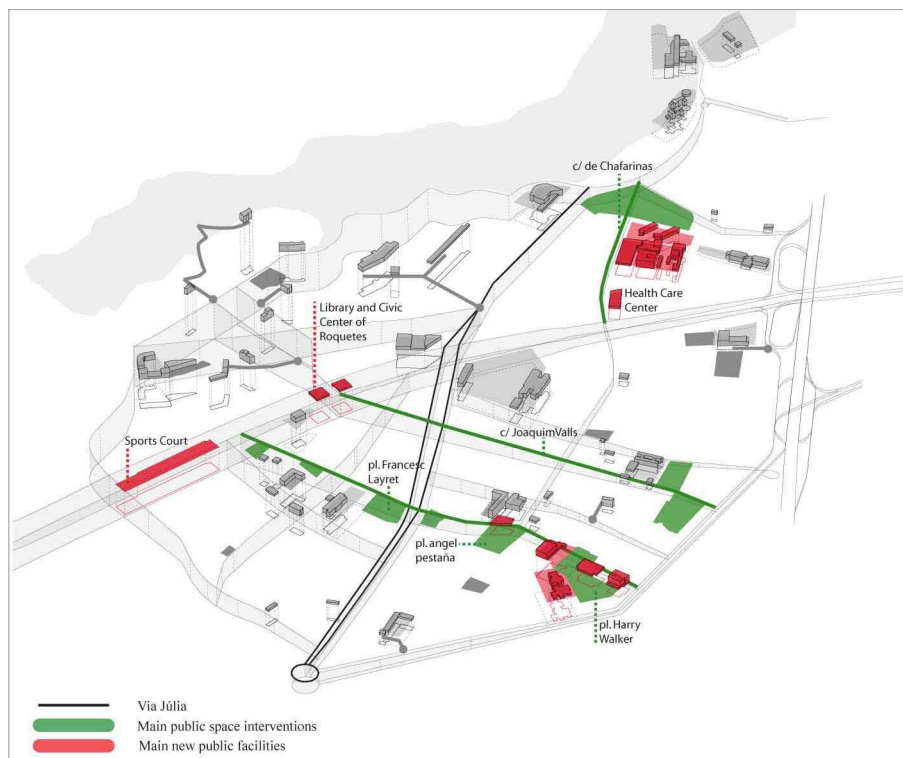
Via Júlia was originally an unsolved join between two extremely dense neighbourhoods –Verdum and Prosperitat- which are settled in platforms differing more than two meters high between them. With

the arrival of the subway in late 1970s the tunnel for the metro station ran two metres above the southern side of the roadway and there was no continuity between the crossing streets. The south facade of the fringe was a strip of land, over 500 m. long, which was practically abandoned and became a steeply sloping marshy area and a place for the random parking of cars. With the new urbanization Via Júlia became a restructuring space which could be used by pedestrians as a meeting point and metro access. The carefully urban design of the operation gently joins Verdun and Prosperitat by giving continuity to the crossing streets. Two metro stations provide metropolitan accessibility to this civic axis where an intense shopping activity is located.

Three local civic axes

After 20 years Via Julia was urbanized, the civic character was consistent enough to extend its urbanity beyond the first façade line. The urban suture between neighbourhoods is completed by three local axes that go straight through the monofunctional and extremely dense urban fabric. The first is the Joaquim Valls Street, which urbanization in 1999 as an exclusive pedestrian road promoted an intense appearance of local businesses that provide an extraordinary vitality to the neighbourhood. The second axis is a string of diverse urban squares -Verdun, Angel Pestaña and Harry Walker- linked by pedestrian streets. The resulting urban structure crosses all district end to end, finding new relations difficult to imagine thirty years ago. The urbanization of this string was completed in 2004. More recently, in 2006, the re-urbanization of the street Chafarinas has enabled the pedestrian link between the district of Trinitat Nova and the rest of the city. This connection, nonexistent until the consolidation of this axis, is strengthened weekly thanks to functional program assigned to it: an open-air market is celebrated in Chafarinas street every Wednesday. Apart from that, some district facilities and a new metro station are also located at certain points of the axis.

Figure 12. Major public space and facilities interventions in Nou Barris 1980-2010.



It should be also considered the enormous investment effort done to improve local mobility in public space in Nou Barris. In “Urbanizing the periphery: 1929-80. Five reasons for housing deprivation”

the critical slope was described as one morphological condition of the first periphery in Barcelona. Another sociological condition is the high rate of aging in these neighbourhoods. Both features, critical by them, are especially acute if given simultaneously: the presence of especially vulnerable population in an unfavourable urban tissue exponentially increases the risk of marginalization. Thus, much of the investment in Nou Barris was addressed to the construction of escalators and elevators strategically located in the most critical sites. These new infrastructures opened a new net of relations and routes impossible to imagine before they were built.

Social diversification through public facilities program.

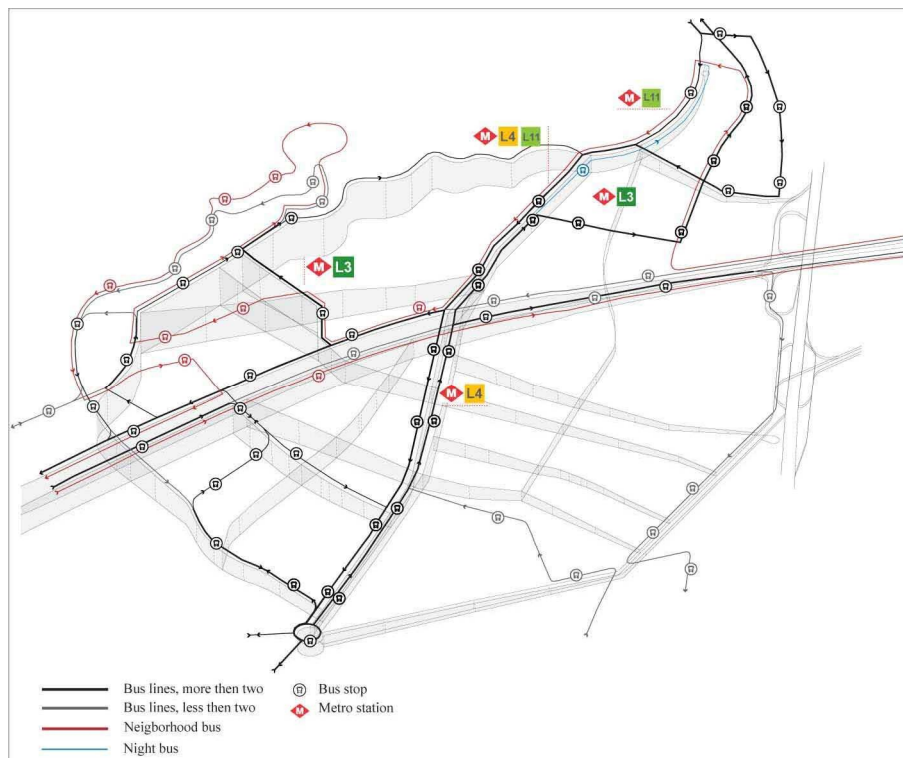
Interventions in public spaces in Nou Barris cannot be understood without considering a policy of new facilities programming. Both systems, facilities and open spaces, are planned together and are seen as the two pillars on which to build the scene of the collective sphere in the district. As seen in “Reinforcing infrastructure through public space” facilities are also used as urban joints between diverse neighbourhoods. It is especially significant in this sense the strategy carried out on Via Favència. Originally drawn on a boundary among three isolated settlements, this highway passes underground along one and a half kilometre. On the surface a big empty platform 55 meters wide results to be a terrain vague where some public facilities are built. They promote a certain social cohesion between neighbourhoods that, otherwise, would have been turned away from each other. These public facilities are:

- The Public Library and Civic Center Roquetes, placed as an ending of the Joaquim Valls Street.
- The local Healthcare Center at the intersection of Via Favencia and Chafarinas Street.
- The sports field area at the end of the civic string Verdun-Harry Walker

Metropolitan integration through public transportation policies

Public transport accessibility has also been a priority in Nou Barris. The integration of the district into the metropolitan flows of public transportation made possible to overcome its original exclusion and the introduction of non-strictly residential activities. In 1980 the district was only accessible by very insufficient bus service. Today the area is easy to reach by three different metro lines that have created opportunities not only in terms of mobility, but also in terms of functional and spatial planning.

Figure 13. Public transportation system in Nou Barris in 2010.



The location of the metro stations have usually very little to do with the management of urban space. Land subsidence or large existing underground infrastructures definitely determine the route of underground and its exit into the surface. However, once the stations are built, they can be considered as main catalysers of urbanity. The vitality inherent to an access point such as a subway station is a huge potential for renovation of deprived housing areas. Thus, the renewal of Via Júlia couldn't be understood without the metro stations built in 1982. More recently, Chafarinas street's civic character has been greatly reinforced with the construction of a new metro stop in 2008. Public space, facilities and public transportation system work together. They promote the necessary conditions for a new urbanity in these tissues. Again, all actions have been designed in an integrated single strategy.

Dwelling conditions improvement through specific renewal programs

The industrialization of the 1950s and 1960s called for a great number of workers. As seen in chapter "Social enclosure", the public administration initiated a policy of social housing by promoting a large number of housing estates. During that period the Spanish economy was still suffering the effects of the Civil War and the building industry lacked of appropriated technology. The first housing estates built during the 1950s were developed in these extraordinary adverse conditions. After fifty years they suffer very important building pathologies and they cannot provide the basic living conditions. Some of the housing estates built in Nou Barris were promoted in the first 1950s and, consequently, they ask for renewal processes. In some cases –Trinitat Nova- the renovation is still on progress. In other cases –Verdum, also known as Habitatges del Governador- the process is completed.

Habitatges del Governador

The 639 apartments of Habitatges del Governador were built in 1953 as a provisional location to resettle the slums dwellers of other parts of the city. The provisional nature of some apartments was the reason why the apartments were built in conditions below any minimum habitability. The two-room apartments had only 23,46 square meters of usable space. The shutters offer no waterproofing and no thermal insulation. The common spaces are, due to their morphology, difficult to maintain and

very unsafe. The estate lacks of any urban value since the apartments are sited forming large blocks of houses the inbetween space of which have not been urbanized yet. Due to their difficult control and maintenance these spaces constitute the perfect scenario to the fostering of activities that impoverish socialization in the district.

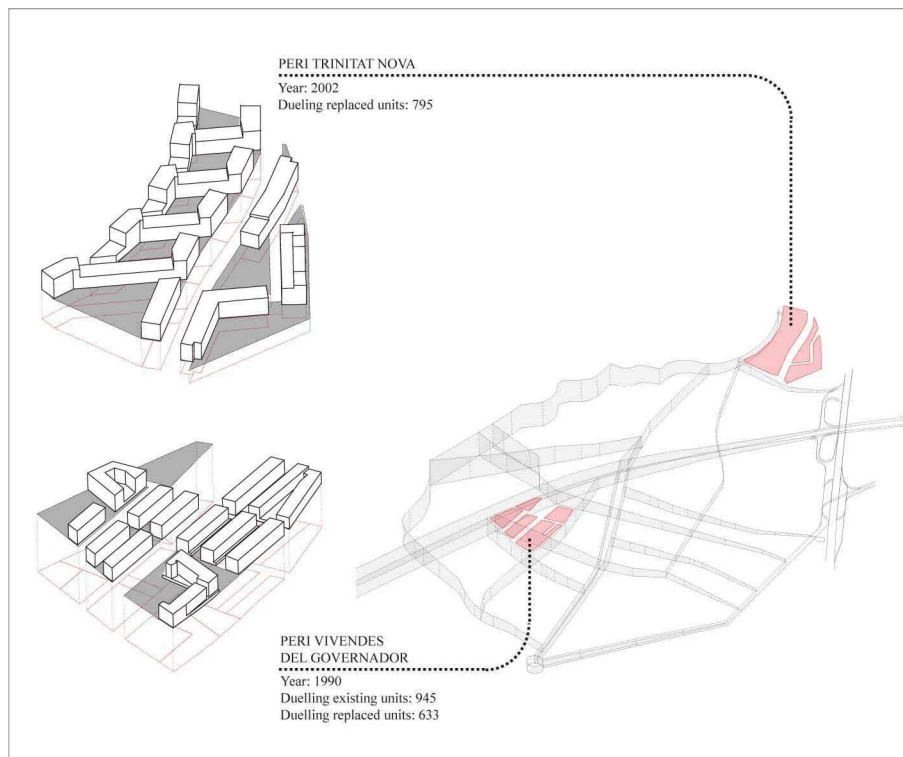
The renewal plan for Habitages del Governador deals with both urban and architectural strategies. Regarding the urban scale the lack of public space in the district was determinant for the renewal process. The main urban action of the plan is the opening of a new public space which runs transversely across the new buildings. On the architectural scale, the first stage was the restoration of empty apartments which were immediately used to provisionally resettle the dwellers while their original apartments were demolished and the new ones were built. The increase of usable surface from 24 to 70 square meters was a very remarkable improvement.

Trinitat Nova

In 1990 a common structural pathology in many social housing built in the 1950s was discovered. The collapse of a building in Turó de la Peira pointed out that deficient concrete was used in many housing estates. A wide program of analysis and detection was carried out by the authorities. Resulting from that, some housing estates were listed as prior areas to replace. The housing estate of Trinitat Nova is one of them. The renewal plan, still in progress, was initially programmed to replace the old buildings with a new eco-district. The blocks of flats built in the 1950s are characterized by having a quite small usable space. They were built without considering minimum services of urbanization, streets or sewer systems.

Dwellers participation was considered during the planning and execution. A series of criteria such as low energy consumption, water recycling systems or the use of renewable energies were agreed between the neighbours' representatives and the public administration.

Figure 14. Urban renewal punctual interventions in Nou Barris.



Future actions on still deprived areas. Four challenges ahead.

The set of actions on Nou Barris developed in recent years meant a very important investment effort on the district. In December 2004, for instance, the City Council of Barcelona and the Autonomous Government of the Generalitat de Catalunya signed an agreement under which the investment of 11 million Euros addressed to urban renewal actions in Roquetes was approved. Only a month later, on January 27th of 2005, the works of the metro affected the subsoil in El Carmel producing a hole that affected 84 buildings and caused the evacuation of 1054 people. El Carmel's incident had huge media impact and urban renewal in the neighbourhood became a priority in the municipal agenda. El Carmel, along with other areas of the first periphery not sufficiently considered so far, became the new scenario on which further develop urban renewal policies that had already been tested in Nou Barris. There is, however, from the beginning a substantial difference between the interventions already culminated in Nou Barris and the present or future interventions in other districts. In the first case the actions, although they are coherently well implemented, don't refer to a general framework that programs them over time and displays them together in a final scenario. On the contrary, future actions in El Carmel and other neighbouring settlements are framed in a general consideration that, shaped as Planning Documents^{viii}, lists the strategies to follow, defines the concrete actions and even programs them over time. This general reflection aims to place all actions in a future coherent overall picture.

Nevertheless, it can be established a direct relationship between the strategic guidelines laid down for new interventions and the ones already culminated in Nou Barris. The topics of reflexion for the new urban reform scenarios are:

- Planning of new public space not just at the local scale, but at city scale and even at metropolitan scale.
- Planning of existing metropolitan facilities and programming of new local ones.
- Improvement of the internal mobility of the neighborhoods.
- Renewal of urban fabric with severe deficits of habitability.

Public space policies: from the local axis to the large metropolitan park.

Many of the urban deficits of the neighbourhoods included in this study are due to its original location on steep areas as we saw in "Weak infrastructure". There is, however, a positive reading of this initially unfavourable situation: neighbourhoods on slope have a privileged relationship with the hills of the city. These areas, considered so far wild and inaccessible, are seen now as spaces of opportunity for the construction of new free spaces of urban, or even metropolitan, scale. Their consideration as green spaces of public use could mean a significant change in the way of understanding the city and its relationship with the territory. That would be a change even comparable to the urban revolution that meant, in the late 80', the recovery of Barcelona's seafront. These new areas of opportunity are:

Tres Turons Park

The intervention on the urban park of Tres Turons is framed in the reflexion that raises the improvement and the achievement of the strategic green of the city. The Programme of Municipal Action 2004-2007 already included among its objectives the improvement of the slope of Collserola as of the strategic green spaces in the City. The current Programme of Municipal Action 2007-2011 calls for the implementation of the Strategic Plan of green and explicitly remarks the impulse of activities necessary to improve public space. The main objective is making it environmentally sustainable and promoting the proper relationship between the large green areas and the urban fabric. The suggested actions are specified, among others, on the consideration of the Tres Turons Park as a future Urban Park. The goals that the new design should get are:

- Balcony of Barcelona. Reinforcing the integration of the park in the city, its centrality inside Barcelona, and the role of privileged balcony over the city are main objectives to achieve.

Tres Turons will be part of the set of large parks of Barcelona, along with Montjuic, the Ciutadella Park, and the Diagonal's Mar. Its topography and location will confer it a remarkable uniqueness among all the parks of the city.

- Interaction of the park with the neighboring urban tissues. One of the key aspects is the consideration of the park as a potential in strengthening and integrating the neighboring districts. In order to make it feasible is necessary to treat the perimeters as fringes that revitalize the existing urban fabric. The main objective is to improve the structure of interaction between the system of open spaces and the consolidated urban fabrics, determining which buildings can be preserved and complementing them with new uses and activities. The new operations should seek the articulation of new spaces of local scale with the general structure of the Park. The contact strip should be designed as an area capable of improving the access from the basic road network to the park.
- Catalyst of a system of open spaces. It is considered that the effects of a great open space may be extended beyond the boundaries of the Park, establishing future relationships with other small surrounding open spaces. Specific actions of emptying and the creation of squares inside the most congested neighborhoods can be promoted in order to set up a network of open spaces that provides continuity to all the leisure areas.

The Park of Collserola

The Park of Collserola must be handled with special care. Due to the strategic nature of the park, which is not only a green area next to the city but a key part of the natural system of the metropolis, a systematic and comprehensive approach is necessary. A special attention should be taken in the transition strip between the urban tissue and the park. A Strategic Plan of the natural system of Collserola has been recently undertaken under these criteria. This plan, elaborated by a multidisciplinary team of specialists, emphasizes ecological aspects such as those related to the morphology of the land, geology, hydrology, infrastructure and landscape. The following partial initiatives are indicated in the plan:

- Extension of the "Carretera de les Aigües", a scenic road that runs all along the slope of Collserola. Its tracing will complete the urban border of the city.
- Creation of interspaces of intensive use adjacent to the city, in order to reduce the urban pressure on the hills of Collserola.
- Readjustment of the boundaries of the park and of the planning qualification of the perimeter strip.
- Rationalization and reopening of some access roads from the city to the park.

Public facilities and activity: the construction of the collective sphere.

It has also been stated in this paper that urbanity in specially deprived areas calls for the construction of the collective sphere. Overcoming their functional isolation, diversifying the economic activities and setting a system of local public facilities have been strategic lines that in Nou Barris meant a very significant improvement. Therefore they are also considered in the new framework of general discussion:

Promotion of new civic axes

Industrial and manufacturing activities are practically nonexistent, and so are tertiary and shopping activities in El Carmel and surroundings. The service level per inhabitant is 1 shop per 75 inhabitants, well below the average of Barcelona which is 1/40. The residential use is concentrated in unconnected packages, isolated by large facilities or open spaces. The lack of non-residential activity is one of the most serious deficiencies, and results in one of the lowest index of economic and urban diversity in Barcelona. The Planning Document proposes a set of interventions to strengthen certain streets, strategic enough to establish a minimum network of itineraries and nodes of high urban vitality. The new network will turn a fragmented system of neighbourhoods into a cohesive urban structure and,

therefore, it will take advantage of new synergies, enhancing the functions and environmental qualities of each neighbourhood. Indeed, these axes should be characterized by the quality of space, good accessibility and, especially, the mix of uses and activities. These new uses should be mainly based in the intensification of the residence but, especially, in the introduction of tertiary uses and the presence of shopping activity.

Urban management of large metropolitan existing facilities

The first periphery has also been occupied by metropolitan scale facilities that are not serving the closest neighbourhoods. They are highly specialized facilities (Hospitals, Universities, large Sports Fields, etc.) and isolated from the surrounding urban fabrics. Although they are necessary for the city, they can have negative effects on the nearby housing areas because of their intensive use and the interruption of the street patterns. It is proposed to open, when possible, the unoccupied spaces of these facilities by making them receptive to neighbourhoods, removing unnecessary obstacles that, today, are impassable enclosures.

Programming of local facilities

A renewed network of local scale facilities should be programmed. In order to achieve this goal the District of Horta-Guinardó has assumed the drafting of a Plan of Local Facilities. Among the considered actions, the document explicitly bets for the improvement of existing public uses and the new construction of nonexistent facilities, such as nurseries, elderly homes or some specialized sport facilities. Due to the strong consolidation of the urban fabric, the provision of land for new facilities will remain highly dependent on local operations of urban renewal. They will create, according to the Catalan urban law, a legal framework that enables the requalification of land for public purposes.

Interventions on the built urban fabric: improvements on habitability and mobility

Still today areas with remarkable urban deficits can be found in the first periphery of the city. The potential degree of transformation that each one of them has depends on its physical condition, the typological value of the fabric and the legal situation on which they are assigned to. Some of these areas, being built on public space, are contrary to the determinations of the General Metropolitan Plan. They are settlements that were informally urbanized and currently sited on land classified as green zone^{ix}. According to their legal status, these areas should be treated in three different manners. The first case is formed by settlements for which the planning prescriptions propose demolition and, depending on legal background, their relocation in other areas of the city. In the second group, however, the Metropolitan plan sets out the conditions for transformation. These are sectors in which, being necessary the renovation of the urban fabric, some of the defining features of its urban morphology should be preserved^x. Finally there is a third group of settlements which, not being originally scheduled its transformation, substantial renewal must be considered. The common objectives to all these operations are the enhancement of urban configuration, the improvement of public roads, the creation of open spaces and the recovery of urban landscape. The MPMG of Caramel works particularly in this line, defining various Urban Improvement Areas which have as main objective the renewal of the urban fabric. By opening up the block and decongesting the building, it is intended to improve the habitability conditions^{xi}.

ⁱ Busquets, J. “La urbanización marginal”, Barcelona, Ed. UPC.

ⁱⁱ According to the analysis included in the Master Plan for El Carmel. Martin, A. et alt.: MPGM del Carmel i els seus entorns”.

ⁱⁱⁱ The estimated population of the first periphery of Barcelona is 346.000 inhabitants (source Carracedo, O; Sotoca, in: “Strategic Plan for the housing areas on slope”, Ajuntament de Barcelona, Planning Department, 2010)

^{iv} Carreras i Verdaguer, C. “Atles comercial de Barcelona”, Ed. Ajuntament de Barcelona, 2003

^v In 1990 a structural pathology –aluminosi- was discovered in some buildings of el Turó de la Peira, when one of them collapsed. Aluminosi results from the use of aluminium as a component in the concrete structure which, in case of continuous high humidity conditions, loses resistance to compression. From 1990 a wide and intense analysis of all housing stock built during the 50’, 60’ and 70’ was done. It was concluded that many of the housing estates promoted in that period should be replaced. The renovation program, carried out by ADIGSA (renamed in 2006 as REURSA), has completed until today interventions in 22 neighborhoods.

^{vi} Martin, A., op. cit.

^{vii} Most of the renewal plans of housing estates in Barcelona avoided the urban scale intervention. Street pattern and public space structure wasn’t modified, even when urban scale disfunctions were pointed out. See Montaner, JM. et al: “Reviure els barris. Substitute housing plans for improvement of Urban Areas in Catalonia”, Barcelona, Ed. Generalitat de Catalunya, 2001

^{viii} Since 2005 the first periphery of Barcelona has turned into one of the major and most significant issues of the urban agenda of the city. Three main Master Plans have been approved in the last five years: MPGM de la Vall d’Hebron (18/03/2005), MPGM de l’àmbit del Carmel (01/06/2010) and MPGM en l’àmbit dels Tres Turons (12/01/2011). Strategies on public space, mobility, public facilities and housing renewal are common policies in all of them.

^{ix} That is the case of most of the urban fabric settled over the Tres Turons Park. See Clos, O. et alt.: “Modificació del Pla General Metropolità en l’àmbit dels Tres Turon”, map o.09a, Ajuntament de Barcelona, 2011.

^x The strategy of morphology preservation was adopted for the neighborhood of La Clota. See Carracedo, O. and Sotoca, A. :”Pla de Millora Urbana La Clota Conservació”, Ajuntament de Barcelona, 2007.

^{xi} Martin, A. op. cit. p. 23: “According to the development in the district under the Building Regulations of the Regional Plan 1953 , the neighborhood of Carmel shouldn’t be considered, at any case, as a neighborhood of insula. The lack of regularity in the ground and the absence of order of the network of streets make us consider El Carmel as a dense agglomeration in which the diversity of situations of plots without a minimum cohesion and homogeneity. The space between streets can’t be understood and treated as homogeneous insula”

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