Qüestions d'Habitatge



The Barcelona Renovation Model

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Presentation



Renovation, a tool for transformation

People's health, quality of life and well-being are directly linked to good living conditions. This is what the scientific studies say and it is patently obvious in cities that look after residential buildings through renovations. In addition, maintaining dwellings in good condition is a key tool against inequalities and gentrification and in defence of the right to live in decent housing.

Having a housing stock in good repair in Barcelona is a major challenge. We have our own city model, which we reformulated during our previous term of office with the aim of putting not just people and their well-being, but also sustainability and energy efficiency at the centre of our model. Examples can be seen from the Authority's lines of proactive aid for allocation to the most vulnerable communities and making aid to owners conditional on them renting out their properties at an affordable price.

In addition, our commitment to renovation has brought about the revitalisation of a specialist and highly skilled professional sector. In other words, it has a positive impact on the economy and employment in the small and medium-size enterprises in the city and its neighbourhoods.

We at the City Council are sparing no effort to promote renovations, but this is not a task that can be carried out solely by the Administration and professionals from the sector. Also needed is the co-responsibility of the property owners,



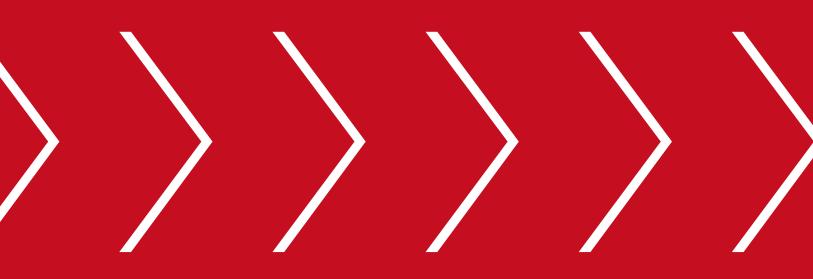
Lucía Martín González Councillor for Housing and Renovation at Barcelona City Council who have to ensure their properties are properly maintained.

The following pages offer an in-depth analysis not only of what renovation in Barcelona entails, but also its successes and the challenges that lie ahead of us. This issue 23 of *Qüestions d'Habitatge* includes an article by the Councillor for Housing and Renovation who preceded me, Josep Maria Montaner, which takes an in-depth look at the city's renovation model. We are lucky to have the legacy of his expertise.

The publication will continue with two authoritative voices from the renovation guild: Jordi París and Josep Gassiot. Note should be taken of what they say as they represent a group that plays a key role in bringing about the renovation model the city needs. Below, you will find a conversation with Carme Borrell, Manager of Barcelona's Public Health Agency, highlighting one of the reasons for going ahead with renovations, namely to improve people's health.

We completed this issue with a collection of examples of the public and private housing stock's renovation projects. Some are already a reality and others are projects at the drafting stage that will soon enable numerous families to have a comfortable and sustainable home in a good state of repair.

We hope you find this useful.



The Barcelona renovation model





Towards a new culture of renovation in Barcelona

The future of cities lies in the renovation of their neighbourhoods rather than new buildings. This change relates to the new values of citizenship, with its raised awareness of ecological problems and championing of city sustainability.

While restoration of monuments was a human activity which first began in the 18th century, and currently includes intervening in fragile modern architecture, as championed by DOCOMOMO¹, recognition of renovation has been notable over the last few decades, different in scale and values. Renovation — in contrast to restoring unique buildings — is focused on ordinary buildings, residential networks, whether or not historical, whether or not social housing complexes, built under modern-movement principles; it is not about objects but rather about systems, where the city is understood as an ecosystem, and it not only involves what is built but also extends to the public space and to the level of urban regeneration.

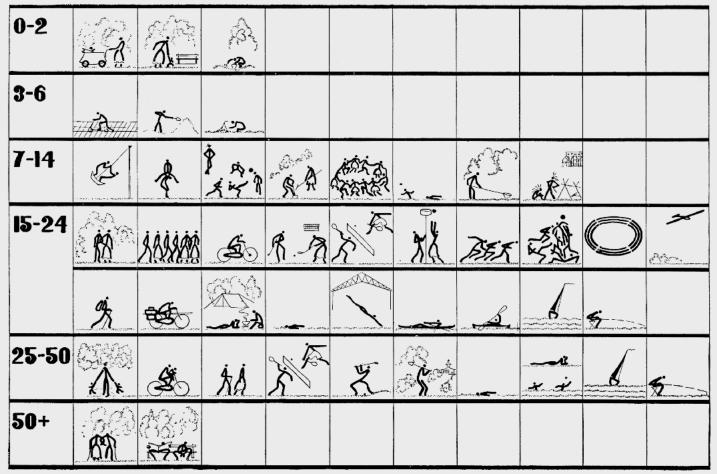


Josep Maria Montaner Architect and professor of theory and history of architecture (ETSAB-UPC)

Renovation has its own history: as a contemporary concept it arose from a proposal from Patrick Geddes' conservative surgery and from the pioneering initiatives of British philanthropists such as Octavia Hill and Lady Aberdeen, and it improved existing neighbourhoods around the turn of the 20th century. It was consolidated during the 1970s, under the Urban Plan for a typological, infrastructural and chromatic restoration of the historical centre of Bologna, in Italy; the urban plan was started in 1969 to gradually redo the medieval areas, one by one, based on a study of architectural types, introducing improvements in accessibility, bathrooms, kitchens and facilities, attempting to recover the traditional city's chromatic image, while following the goals of leftwing urban thinking.

These methodological antipodes show us what has been carried out in Chinese cities, such as Xi'an, Shanghai and Beijing, where monumental enclaves have been embalmed and historical residential fabrics, *hutong*s, systematically razed, to make way for the construction of new areas with tower blocks for offices, hotels and apartments. China consumes 40% of the world's cement and yet its buildings are not expected to last longer than thirty years.

^{1.} DOCOMOMO stands for the International Working Party for Documentation and Conservation of Buildings, Sites and Neighbourhoods of the Modern Movement. It is a non-profit organisation dedicated to the conservation of important buildings.



RECREATIONAL NEEDS OF DIFFERENT AGE GROUPS. These needs, together with the percentage of the total population corresponding to each age group, form the basis of the programme that will enable us to plan the recreation areas. This graph, designed by the Dutch group C.I.A.M. for the city of Rotterdam, formed part of a comprehensive study of the recreational needs of that city.

A framework from the 1930s, from the International Congresses of Modern Architecture, where people over the age of 50 were given no other option but to take their strolls supported by their walking sticks or sit down on a bench.

General concepts of an evolution

Beyond standard contemporary concepts, such as globalisation and sustainability, we can highlight six recurrent phenomena in the development of cities in general and in Europe in particular, which have had a major influence on the promotion of renovations:

1. The ageing, both social and physical, of the built environments. In Europe, above all, we live in already made cities, and longer life expectancies have led to an ageing population requiring transformations of all its urban structures, public spaces and facilities so they are more accessible, friendly and sustainable.

In his book *Poden sobreviure les nostres ciutats?* (1942), Josep Lluís Sert, dealing with uses of public spaces according to life cycles, turned to a 1930s system from a Dutch branch of the CIAM², in which people over the age of 50, described there as old, were given no other option but to take their strolls supported by their walking sticks or sit down on a bench. After several decades, the demographic panorama, life expectancies and active ageing have totally changed conditions. And this change requires the complete transformation of cities and dwellings, bearing in mind that a high percentage of elderly people aged 80 and over have functional limitations.

2. Individualism and the need for individualisation. Our "liquid modernity", as conceptualised by Zygmunt Bauman, stands out for its growing emphasis on individualisation and social distinction, on uniqueness and diversity. All this can lead to atomisation and consumerism, for example, multiplying electrical The ageing of the population requires transformations of urban structures, public spaces and facilities so they are more accessible, user-friendly and sustainable.

appliances. Of course, an imaginative urban and social management may boost participation in agreements and exchanges for remodelling buildings that house different ways of living, where new relationships between people are established, with the possibility of offering shared services and co-housing experiences.

With regard to the emphasis on diversity, you can see iconic examples such as Silodam in Amsterdam (1995-2002) from the MVRDV group (Winy Maas, Jacob van Rijs and Nathalie de Vries), with a huge variety of typologies; and agreements between individuals in the housing-renovation project in the old centre of Granada, a process of exchange, reforms, temporary expropriations and additions, started in 1989, coordinated and designed by Juan Domingo Santos.

When users ask for uniqueness, massive repetitive housing complexes are not appropriate. By contrast, the initial complexity we find in existing urban fabrics is much greater, shaped by diversity of type. Today it is about planning case by case, whether small collective housing projects or remodelling or renovation projects.

3. Flexible and diverse uses of housing. Diversity of household units, different from conventional families, is becoming more and more common. Changes of uses in such places are therefore needed. There has been a break with traditional social structures and networks and, at the same time, a rise in migratory movements in a context of post-colonial societies and relations through social networks. The percentage of traditional nuclear family is decreasing compared to various types of household units, which are evolving and being reconstructed. We therefore need dwellings that can be transformed and spaces without hierarchies.

4. Rethinking technology from the point of view of human and social use, in other words, developing intermediary, interactive, replaceable, sustainable and recycling-made technologies. Immersed in a society of information and communication technologies, and with a vast range of materials and techniques, new coordinates need to tried out for a social and egalitarian use of technical contributions, in favour of quality of life in housing and in the city. There is an extensive field of experimentation, which was pointed out through some of the proposals for Casa Barcelona in Construmat publications at the start of the 21st century, or through the current Barcelona proposal from the APROP (local provisional accommodation), based on industrially produced modules and located in the city's now established structure. In sum, this is a humanised technology that can be adapted to our built environments, which lacks a universal value but needs to be different in each context.

5. An increase in the value of "urban culture". Social relations, gender equality, quality of life, well-being and happiness are becoming increasingly appreciated; in other words, values of centrality and proximity which are developing in a dense and balanced city. Facing the prospect of disperse urbanisation, compact cities are the key to tackling ecological problems, which involves making the most of existing cities, their remodelling and densification, by prioritising renovations over demolitions and new building work, reducing our dependence on cars and boosting public transport systems.

6. Reducing the presence of cars, giving priority to pedestrians and cyclists, increasing green spaces and improving public transport. Louis Kahn had already asserted in his urban projects for restructuring Philadelphia (1945-1962) that

Compact cities are the key to tackling ecological problems, which involves making the most of existing cities, prioritising renovations over demolitions and new building work.

road traffic was the greatest enemy for communal coexistence and social and comfortable life in the modern city. Christopher Alexander and Serge Chermayeff argued in Community and *Privacy* (1963) that the worst enemies of privacy were traffic and noise. Cars and motorcycles are responsible for 80% of urban noise and, because of their gas emissions, constitute the number one enemy for quality of life and human health. These days there are examples, such as "car-free" colonies and neighbourhoods in Vienna and Freiburg, where users opt to restrict the use and presence of cars, in favour of cutting costs and CO₂ emissions and improving housing complexes. Families are giving up cars or one out of every ten uses car sharing; the savings made from what would have been high underground-construction costs for parking places are being invested in gardens and facilities. Such an urban policy has been launched in Barcelona with superblocks, starting in Poblenou and by the Mercat de Sant Antoni; the Amendment to the General Metropolitan Plan (MPGM) for parking places, which exempts public housing, cooperatives and ecological buildings from the obligation to build parking places, represented a key advancement for adapting to the new times.

All this involves prioritising the renovation and remodelling of existing cities, boosting a new culture of maintenance and reassessing traditional dwellings for their possibilities and flexibility. If we were to follow the principles of common sense, making the most of and improving what we have while maximising its yield, there would be greater equality and diversity.

Strategies

There is a close relationship between society and architecture. Renovation policies, based on diversity and multiculturalism, are the best alternative for our times, as they promote a maintenance culture that requires a series of changes, strategies and priorities where social, urban and environmental aspects interact.

1. One key is the densification processes of unoccupied territory, to boost proximities needed between dwellings and services, facilities, shops and activities. Take the example of Almere, in the Netherlands, and its remodelling and redensification of the centre of a new residential neighbourhood, which the existing fabric has been filled and completed with, under the Rem Koolhaas / OMA master plan, for a three-level city: infrastructures, pedestrian passages and dwellings. Private initiative is behind the La Casa por el Tejado developments in Barcelona, which re-assemble pre-fabricated modules while renovating entire buildings. The City Council has proposed ATRIs (tactical inclusive-repopulation accommodation units), which take advantage of empty land sites, party walls and repairs that are still possible. The goal is to increase the stock of affordable housing, by exploring the city's densification opportunities, as New York city has been doing under its "Mandatory Inclusionary Housing" programme, which allows developers to produce higher and denser housing projects, on condition that a given percentage of such housing is allocated to affordable rent. Such a scheme has been introduced in Barcelona, with a 30% reserve of protected housing in new operations and renovations of a certain size.

2. Interventions in public spaces and recycling next to buildings. Society currently calls for more nature in the city. At the same time, a new neighbourhood landscaping has been developed, for which purposes the most important thing is to integrate it into the water cycle, with conduits, moving water, ponds and drainage points. This is linked to the creation of small urban allotments and

Social diversity of neighbourhoods is a public issue, and lifts have to be interpreted as collective infrastructures.

a reconsideration of ground floors for community uses, to give more life to these public spaces.

An iconic example is the transformation of the Augustenborg neighbourhood in Malmö, which was started towards the end of the 1980s, under a landscaping project, based on the presence of water and urban allotments. Selective waste collection, environmental education and the installation of recycling pavilions and green points in every square or park encourages people to transform their lifestyles in favour of sustainability. There is a compost-based methanegas production plant in Augustenborg. And the key to interventions in Barcelona's industrial estates such as Canyelles and the south-west of El Besòs lies in improving public spaces too.

3. Installation of lifts and improvements in accessibility, including escalators between the buildings located along steep slopes (as in Les Roquetes, in Barcelona, and in Oliveres i Can Franquesa, in Santa Coloma de Gramenet), are an essential tool for making working-class neighbourhoods habitable. All this involves intervening on landings and redoing the vertical circulations of buildings. It is crucial for lift installations to be a process that is partly funded and coordinated by public bodies, with the necessary technical advice. Social diversity of neighbourhoods is a public issue, and lifts have to be interpreted as collective infrastructures for people with reduced mobility.

4. Improving internal and external structures and dwellings' facilities, intervening above all in bathrooms and kitchens, is another necessary process in old or dilapidated neighbourhoods. This means redoing things by keeping demolitions to a minimum and renovating as much as possible. There are pioneering cases in Catalonia, such as the experiences of Joan Margarit and Carles Buixadé



The transformation of the neighbourhood of Augustenborg, in Malmö, based on the presence of water and urban allotments, is an iconic example of the path that is being embarked on towards sustainability in public spaces.

who have been working since 1985 for ADIGSA in renovating neighbourhoods in poor repair, undersized structures and cement weakened by aluminosis, piritosis and carbonation. Support structures were accordingly devised for wrought iron with aluminosis, such as in Turó de la Peira, as were external structures for strengthening buildings, such as the La Pau industrial estate. And a new line of interior renovations was launched during this term of office, to improve health, accessibility, safety and thermal insulation.

5. Improving façades and insulation, to save on air-conditioning energy costs and improve residents' quality of life through sound-proofing. New ventilated façades can be built for this purpose, as has been done in Catalonia's social housing neighbourhoods. These chromatic renovation processes and improvements in energy efficiency can be a good start, as seen in the social housing along Passeig de Santa Coloma, 55-71, in the Sant Andreu district, by the Oikosvia team of architects, though improvements would also have to be made to their interiors during the later stages. Another notable project is the one at Carrer de Lope de Vega, 111, in the Sant Martí district, through which the block's interior facade was redone, as a resilient and adjustable skin, under the project by Carles Pérez, Sandra Bestraten and Emili Hormías.

6. More surface area and an improved relationship with the outside, either by taking advantage of lift installations, with added cantilevers and bodies, with balconies and terraces, or galleries and greenhouses: this is about increasing the surface area of dwellings. The proposals from Anne Lacaton, Jean Philippe Vassal and Frédéric Druot for social housing complexes in France are iconic here. They are about transforming instead of demolishing; with a contemporary intervention that respects the

Participation processes and new forms of governance are crucial for the urban planning of the future.

context of modern housing neighbourhoods.

In addition, there are also many possibilities for boosting relations with the exterior, such as introducing green roofs and incorporating buildings into the water cycle, in collecting rainwater. Increasing surface areas in dwellings is also linked to improving views and transparencies, which ensure they have their own outside space. Demands from residents of the Trinitat Nova neighbourhood in the 1990s were heading in this direction and making natural cross-cutting ventilation a condition for all the dwellings.

7. Energy saving by using solar, geothermal and wind-powered energy, to co-generation and other means, and improving thermal insulation to reduce consumption. A model example is the Vauban eco-neighbourhood, in Germany, where part of the old barracks was renovated and solar houses and a car-park building with solar panels (solar garage) were built. Another example is Sargfabrik, in Vienna (1992-1998), from the BKK-3 team, where a coffin factory was reused with a cooperative-management system for sustainability and renovation. For a future based on energy renovation, it is essential for residents to have sufficient training in energy saving.

8. Participation and governance. Participation processes and new forms of governance are crucial for the urban planning of the future. This is connected to strengthening and developing a new culture for participation and renovation, as in the above-mentioned Vauban neighbourhood. See the proposal for a sustainable everyday life (*Sustainable Everyday. Scenarios of Urban Life,* 2003) by Ezio Manzini and François Jégou; the tradition of housing cooperatives in Montevideo, where priority is given to renovations, and the Jorge Mario Jáuregui method for remodelling, strengthening and urbanising Rio de Janeiro's unregulated settlements.



Renovation processes are key in societies with ageing assets and residents.

9. Renovation is closely connected to the neighbourhood's improvement, in that dilapidated dwellings harm the life of their environment. Which is why the Barcelona Neighbourhood Plan (2016-2019), delimited in Ciutat Vella and the Besòs area, includes, besides renovations (which have focused on "high-complexity properties"), improvements to public spaces, the promotion of cooperatives and implementation of institutes for improving education.

10. Activating jobs. No urban improvement can be achieved without social improvements; and these depend on boosting job-creating activities: maintenance work, workshops, exchanges, initiative incubators etc. Every public euro invested that promotes renovations generates 3 private-investment euros, and with every 30,000 euros invested a job is created. In sum, the public investment required for creating a job in renovation is less than the annual cost of unemployment benefits for every unemployed worker. It is therefore a key sector for the good use of public investment and for promoting employment offers, by strengthening local jobs for small and medium-size enterprises and positive complementary uses for the neighbourhood.

The renovation of small shops next to Plaça de Dolors Canals in the industrial estate in the southwest of the Besòs has enabled the installation of the Neighbourhood Plan's office, creating a visible place for information and training on improving neighbourhoods. The above-mentioned Swedish city of Malmö saw the creation, towards the end of the 1990s, of new workshops, businesses and shops for migrants in the working-class neighbourhood of Rosenga[°] rd; jobs and coworking next to homes, and local shops and small businesses on the ground floors. Quality of urban life is at stake in the form and use of ground floors. Quality of life is improved where walls are removed and facilities, such as

The public investment required for creating a job in renovation is less than the annual cost of unemployment benefits for every unemployed worker.

nursery schools, self-managed and cooperation places, and businesses, such as bars, cafeterias and restaurants, are opened. The greater the mix of classes in a neighbourhood, the more possibilities there will be diversity in work and interrelations.

Renovation processes, then, are the key in some societies, with ageing assets and residents, to the promotion of proximity and overlap of uses and activities and the boosting of social uses of time.

The current Barcelona model

During the 2015-2019 term of office, Barcelona City Council gave priority to renovations (both private and public stock), investing in its promotion a total of 114 million euros, which enabled interventions in 1,971 buildings, corresponding to 29,620 dwellings and an improvement to the quality of life of some 70.000 people. This helped to bring about both a quantitative and a qualitative change, and the consolidation of a new social, territorial and anti-gentrification policy. Today, the city that invented the "Barcelona posa't guapa" programme, thought up for facades, is once again at the fore, with a proposal that is based on the situation in each neighbourhood. In addition, one of the key criteria was to intensify the diversification of stairs: from interventions in interiors and improvements to facades, to general invitations to tender and initiatives in estates in poor repair, not to mention the urban renovation of housing complexes and their public space.

One of the new models introduced to Barcelona, which entails a paradigm shift, involves moving from traditional general invitations to tender which are kept in their investments and place emphasis on structural pathologies, installing lifts, common elements and energy renovation — to investing more financial and human resources in a proactive position on the part of the City Council, which intervenes directly in neighbourhoods and buildings where renovations — which are urgent and due to the social features of their residents — require municipal intervention. Renovations therefore act as a redistribution tool in the areas of rights, quality of life, health and social cohesion.

In other words, they have moved from being an Authority calling for applications from people with the means or information for accessing aid to an Authority that takes the initiative in detecting properties with problems, which separates and diversifies interventions. A team of experts from the Polytechnic University of Catalonia (UPC) was commissioned in 2016 to conduct a crucial and totally new preliminary study to establish the "high-complexity estates"; this was a map of Barcelona's residential vulnerability which detected 444 buildings in poor repair, awaiting renovations and lift installations and with residents' communities with little capacity for selforganisation and funding. Most of these estates fall under the scope of the above-mentioned Neighbourhood Plan.

Another new development are interventions in dwelling interiors where financially vulnerable people live, providing them with aid that may amount to as much as 20,000 euros in the 2017 call for subsidy applications and 9,000 euros in the 2018 call, for improving kitchens, bathrooms, facilities and insulation. Such cases have often been detected by social workers working with older people in their homes and from consultations at the district Energy Advice Points (PAE). 825 dossiers have already been requested, distributed in particular in the districts of Gràcia, Horta-Guinardó, Nou Barris, Sant Andreu and Sant Martí. We are talking about a steady trickle of cases from the neighbourhoods that least access the general call for subsidy applications. And added to this process is aid for up to 20,000 euros for owners who hand over the use of their vacant dwellings to Barcelona's Social Rental Housing Pool.

Renovation acts as a redistribution tool in the areas of rights, quality of life, health and social cohesion.

At the same time, renovation can become an anti-gentrification tool that promotes reasonable rental prices, seeing that such aid is only awarded to owners who keep their rental prices within the reference rental price index established by the Catalan government in June 2017. Called for by Barcelona since 2016, this price index was finally dealt with and represents the first step towards the crucial regulation of rental prices. The second step is promoting rental prices within this average range, and this may fall within the jurisdiction of local authorities. And the next step, depending on State or regional legislation, will be for municipalities to have the authority to fine owners for abusive rental prices.

Another of the big contributions is territorial distribution. This can be seen if we overlap and add together the three plans of the three types of aid: the general call, for subsidy applications, which covers, above all, Ciutat Vella, Eixample and Gràcia; the call dealing with housing interiors, in the above-mentioned neighbourhoods, and the call dealing with high-complexity estates under the Neighbourhood Plan, in the districts of Nou Barris, Sant Andreu and Sant Martí. So we have a very different map of the last few years which shows us that renovations are really used for building a fairer and healthier city, redistributing urban values.

Another of the values contributed by public aid for renovations, besides stimulating the building sector and the training of professionals, is the promotion of a legal economy, based on enterprises that pay taxes and follow regulations, far removed from the underground economy that has characterised part of this sector, seeing that such aid has to be justified with budgets, plans, permits and employment contracts. All this helps to make the processes clear, regulated and transparent.

Of course, it is Barcelona City Council that has made the majority of the effort here. While it is a call from the Barcelona Housing Consortium shared with the Catalan government, the latter invests only 20% in it (when the Consortium's articles of association state that it has to be 60%), and Barcelona has to cover 80% of the total for every type of financial aid for renovation. It is true, however, that the Catalan government, for its part, receives less money from the Spanish State, which has refused to deal with the housing problem and which, despite its change of government in 2018, has not created a much needed Ministry of Housing and seems to lack the resolution to bring about structural and regulatory changes in public housing policies.

In spite of all that, renovations are achieving a rate that will enable us to approach the European average. 2017 saw the investment of 26.4 million euros, funding approximately 42% of the total 63 million euros dedicated to renovation. The total investment in 2017 was roughly 250 million euros, which meant that the City Council intervened in promoting a quarter of the investments made in residential assets.

If we add to all this the consolidation of a preventive culture of maintenance and remember that the cost of not intervening in time is always greater, we'll be on the right track. It was therefore essential for there to be mandatory technical building inspections, "ITEs", which the renovation aid subsidises for communities with few financial resources.

In sum, and as explained above, renovations offer numerous advantages: they create jobs and promote responsibility and private initiative interventions; they are key to redistributing the right to the city, which has to do with housing and public space, with the right to places and neighbourhoods, and they are closely connected to energy saving, health improvements and life expectancy.



Improving structures is a necessary process in old or dilapidated neighbourhoods. There are pioneering cases in Catalonia, such as the ADIGSA's experience in renovating the external structures of the La Pau's buildings.



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The transformational potential of renovation

A ccording to the dictionary, *to renovate* is to restore something to its former state. When it comes to buildings, however, renovations have to go beyond restoring to original states. Renovation has to meet present and future needs rather than those of the period the buildings concerned were constructed in.

We therefore need to imagine what we would want from buildings in a not so distant future. We would very probably need to expect a high level of resilience from them.

Resilience, in contrast to fragility, is an ecosystem's capacity to return to a normal state after being affected by disturbances or interferences. The resilience of a building is its capacity to adapt to changes. It is the closest thing to being smart, but not necessarily digitally speaking.

What changes?

It all seems to point to buildings increasingly having to adapt to climate and functional changes.

Climate variability is increasingly present, over here too, and buildings are a key element for responding to it appropriately.

Here we have an interesting feature, given that our climate, unlike in many other parts of the globe, has always faced two challenges: achieving comfort when it is hot and when it is cold.

In many countries, the question had been simpler up to now: either it was cold (and the



Jordi París Chair of the Chamber of Professional Service Enterprises in Construction solution was capturing as much solar radiation as possible with maximum insulation), or it was hot (and the solution was protection from solar radiation and managing ventilation and thermal inertia with a certain degree of insulation). In these countries, it will be extremely difficult to adapt to variability since their building culture does not allow simultaneous adaptations to the two adverse conditions. Episodes of *canicules* (heat waves) in France are good examples of this.

If we make the most of a building culture that enables adaptations to different situations and use the building technologies we have at hand (materials, systems, calculation tools), we can make considerable energy and economic savings and make these compatible with the comfort of spaces, even in situations of greater climatic variability.

Another type of change that we will have to face are functional changes in buildings, and renovations can also play a notable role here. Such changes are hardly new, but they never happened at the accelerated pace we see today.

After major reforms are completed in a hospital, we often find that plans are under way to implement a new reform of some functional packages, because the needs of their functional programme have started to change. A primary school built today may soon need to be turned into



Renovation focused on energy and functional resilience that does not represent a significant increase in costs compared to a conventional renovation.

a secondary school, and maybe a few years from now it will have to become a old people's home.

Few buildings up to now had been prepared for taking on frequent and drastic changes. There are paradigmatic examples such as the Modernista Hospital de Sant Pau, which was able to be adapted to a change of hospital model, and finally, to a drastic change of use thanks, among other things, to its flexible-space structure.

Such resilience for taking on future functional changes is one of the main points that have to be taken into account when it comes to comprehensive renovations, not to mention in new-construction projects.

When we talk of functional changes, we are not referring merely to changes in the distribution of spaces but rather to the incorporation of new technologies, regulations and standards. Organising serving and served spaces and providing for clear and strategically located installation spaces should prevent buildings from becoming obsolete too soon and requiring new reforms. This is an economic (not making investments which cannot be recovered owing to early obsolescence) and environmental imperative.

Just as climate resilience is to a large extent related to energy and its sustainability, functional resilience is closely connected to materials and their life cycles, and forms part of the dynamics of the circular economy.

This capacity for resilience, which brings value to buildings, turns renovations into investments, rather than mere spending. Bearing in mind the life cycle of a building is essential here.

A renovation focused on energy and functional resilience is an investment that does not represent a significant increase in costs compared to a conventional renovation (it may even be cheaper, depending on the case), and, at the same time, has a clear economic return, both in the short term (energy savings from day one) and in the medium

A renovation focused on energy and functional resilience is an investment that does not represent a significant increase in costs compared to a conventional renovation. term (improvement of spaces and their capacity to be rented or sold) and long term (enabling future reforms, recurrent savings in exploitation expenses, recovery of the maximum value of the components and so on).

There are additional advantages too to using dry-build systems, manufactured in workshops and assembled on site, instead of renovating through traditional systems: improving the components' quality control and the building work's safety, appreciably increasing performance speeds and material and energy sustainability, encouraging local industries with innovative and exportable technological systems etc.

We have experts over here prepared to take on these challenges with maximum solvency, a business network capable of contributing solutions and European mandates encouraging us to carry out this re-conversion. Making such types of renovations more widespread will result, on the one hand, in a consolidated reduction of consumption as well as an environmental impact on buildings and, on the other, in an increase in the industrial fabric related to innovation and technology, with new high added-value jobs.

The building sector over here has a transformational potential for contributing a value we may not all be aware of but which we need to take advantage of.

Just as it is very important for new buildings to be made with these criteria taken into account, the bulk of the improvement also has to necessarily occur in constructed housing stock that is unequal in building and environmental qualities and in its capacity to adapt to present and future needs.

We would be well advised to promote renovations to speed up a transformation that is already in progress and which can only benefit us as a society and as individuals in the short, medium and long term. \square





Renovation: The challenges

$\bigcup \Box$ of construction enterprises

This communication is meant to be a reflection, the result of personal but shared experiences, on the situation of enterprises dedicated to reforming, renovating and maintaining buildings. Mainly on commonhold dwellings or from the public housing stock managed by the various authorities. My reflections on aspects of managing the execution of works that start with projects commissioned by the various developers and which are awarded to the enterprises that have to carry it out with the quality necessary for satisfying the needs and aspirations of the end users who will be living in the dwellings. The first issue that has to be pointed out is that those who manage renovation projects often have no connection with the people later using the dwellings (the end users), thereby leading to problems and dysfunctions.

The first challenge facing us when approaching a renovation project is the specialisation of the players intervening in projects and their execution.

The first player that intervenes as a manager is the management agent, who detects the needs of the buildings and manages their maintenance. Their function in the usual operations is repetitive and they organise initiatives with seriousness and rigour, and regulate all forms of management in accordance with the legislation



Josep Gassiot i Matas Chair of the Barcelona and Counties Builders' Guild

in force. Management work becomes all the more complicated with special situations arising from building pathologies and special work having to be carried out as a result of technical building inspections (ITEs). They need technical advice from competent professionals and, above all, have to manage the aims of the owners, which do not always coincide with one another in terms of opinions and interests, and have to help to obtain everyone's consensus. The situations become complicated when there are problems arising from unstable financial or social situations. In the case of properties with dwellings with major problems and in especially difficult areas, managing projects requires teamwork and the dedication of an expert in management in collaboration with the various players (managers, experts and builders) that make up the management collaboratively acting together and seeking out all the possible resources.

The second players intervening in renovations are the renovation projects' technical designers. These are expert architects, depending on the case, who have the skills to make diagnoses, propose initiatives, carry out projects and direct them as project managers. As in all construction-related cases, not all the skilled experts have experience in renovation, which is a speciality requiring expertise, both in diagnosing and in preparing projects. In some cases teams have to be set up or the advice of experts sought out to guide the project solutions and find the best ones in terms of cost/benefit ratios. Such is the case with repairing structures that present problems and in which the project proposals require a specialisation for finding safe and affordable proposals which have a minimal effect on the building's functionality. Another obvious case is that of improving the energy efficiency of buildings, which requires expertise for proposing the best project on what is reasonably affordable. In many cases, the construction enterprises' experts offer opinions on how to realise initiatives and enable assessments of the costs arising from these initiatives.

Renovation-dedicated construction enterprises also need specialisation. Carrying out a new-build construction project is not the same as intervening in a lived-in building and carrying out work with the dwellings' users present. Specialisation has to be through technology (making a concrete structure is not the same as recovering bearing capacity with carbon-fibre reinforcement); but also through the way of managing the pace of the work and making it compatible with the lives of the dwellings' residents. Managing every incident requires technicians, work managers and operators with proven training and skills. In general, enterprises specialising in renovations are small and medium sized, with a good level of technification and a capacity to manage responses to various situations. These are enterprises that have to have (and in most cases they do) minimum management protocols to be able to offer traceability in the work carried out and guarantee a high quality.

Managing renovation projects requires the establishment of a team made up of the players mentioned above. The work and projects are complex, there are often incidents that are hard to detect in the project, for example, structural flaws that are impossible to detect at the diagnosis

Collaborative work from the start in renovation projects makes it easier for problems to be solved.

and planning stage. In such cases, any problems arising when the work begins can be more easily solved through collaboration between the various players from the start of the project. This methodology, which is beginning to be used (and not without some resistance) in large-scale newconstruction projects, should start being formally and regularly introduced in renovation work. I would like to point out that in some successful cases, setting up a group between managerdesigner and construction enterprise, with a prior objective selection of this team, has achieved very good results. The rigidity of the traditional hiring process hinders problem solving.

Throughout our sector, projects often do not provide for real prices based on objective costs. The price tables applicable to renovation projects would have to be adapted in each case to the nature of the work. That requires expertise and assessments on the standard price base of the new work do not correspond to real renovation costs.

The problem of assessing work costs extends to diagnosis and planning work too. Often the running of the projects or the overall management of the work is not properly assessed. Savings in projects usually end up expensive when the work is completed. Quality is a mandatory requirement and prices have to be fair to cover costs. We still come across projects and other work in our sector awarded below cost and that causes problems.

We have a growing deficit of works personnel throughout the construction sector, which is even more evident in the renovation sector, which is workforce intensive. They lack specialists from the building and other trade sectors. Vocational training does not work in our sector. The best classroom is a project (with programme and monitoring). Projects are varied, with variable situations, and VT centres are located in very specific places and distance learning is not provided for in these cases. Training contracts do not apply to our sector, under current legislation, and there is strong opposition from the unions and labour authorities to updating them.

One of the difficulties that arise in renovation projects is funding. There are two fundamental issues here. First, aid for renovation and improvement work. Work can be subsidised at considerable percentages through aid. Good planning can help with obtaining subsidies, I estimate, of close to 25% of work costs. But aid is subject to calls for subsidy applications and these are linked to the budgets of various authorities and derive from annual budgets. There is no ongoing or secure line of subsidies; the criteria often change and this makes management difficult. A renovation project has a maturity period of almost two years, during which time the aid criteria may have changed, pending further calls with unknown publication dates.

Aidis necessary for the promotion of renovations, but owners have to fund the rest of the work. It is no mean feat obtaining funding from banks, and city residents are somewhat suspicious of using such means. Banks treat such loans as consumer credit at the corresponding rates. Furthermore, they are suspicious of guarantees offered by owners' associations and, above all, of the social impact of a possible foreclosure for payment defaults. Many renovation enterprises currently offer funding for part of a project and do so from their own resources or with financial leverage from a bank, but this has a limit for each enterprise, and should not be a regular or future policy of the sector.

The tax aspects of renovation are another issue that would have to be dealt with. Tax relief for renovation projects is not stable in financial years and is seldom used. One aspect we have been demanding for a long time now is renovation VAT. The reduced VAT rate of 10% may apply (nominally) to renovation and efficiency-improvement work, but the VAT rule sets certain conditions that

Many renovation enterprises offering funding for part of the work, but this has a limit for each enterprise.

are not clear, are subject to interpretation and create doubts even for the experts. It would be necessary to simplify and clarify the application of the reduced VAT rate of 10% and apply it to all renovation projects. This now long-standing demand has never been considered by those in charge of taxation under different governments.

Renovation is a sector with a strong presence in the unregulated economy. Construction enterprises are hardly regulated and this encourages the emergence of some enterprises that do not act transparently and fail to comply with their employment and tax obligations. The supposed liberalisation of business activities has enabled them to act in the market, once they obtain a tax licence. There are no obstacles to entering a sector that has a considerable social repercussion. Some regulation in this case would serve as a mechanism to safeguard consumer interests. Compliance with the measures for health and safety, waste treatment, legislative employment and tax obligations would have to be required by the competent authorities and by all the players intervening in the work. City residents would have to be aware that, to safeguard their interests as consumers and acquire the guarantees they are entitled to, they would have to call for transparency and all legally enforceable requirements.

We have always proposed the promotion of voluntary registers in construction enterprises, such as the CONSTA register (www.consta.org) for organising the sector, an initiative that we have always called for to protect the sector and, above all, consumers.

Another challenge we need to take on, as construction enterprises, relates to improving the energy efficiency of buildings. The passive behaviour of buildings accounts for 20% of our country's total energy consumption. A decisive but prudent plan would enable a 50% reduction in such consumption. In other words, under a ten-year plan we could reduce energy consumption and emissions by 10%. To do that we would have to introduce the energy vector in every renovation project, raising awareness among citizens and the entire sector. So far, for all the notable and well-focused efforts, there have been no significant results. Why? The response is complex, but in my opinion there is a lack of convergence between the renovation and energyimprovement programmes. Renovation can be understood as an improvement to the safety of buildings (structures), accessibility, building envelope pathologies and habitability problems such as humidity. Energy efficiency programmes help and fund more efficient insulation and facilities, although the citizens do not appreciate the need for thermal improvements if they have problems they consider priority, such as safety and accessibility. Another school of thought I believe to be mistaken involves justifying energy improvements with the savings that would be obtained in consumption. The returns on investments in residential buildings under this criterion are between ten and twelve years. The value that has to be promoted is improved wellbeing, health and, above all, civic awareness for helping to fight to reduce CO₂ emissions.

An effort must be made by renovation enterprises to integrate new expertise. We know a lot about construction and have good understanding of the mechanics of structures and now we need to incorporate knowledge of thermodynamic applied to buildings. With the collaboration of the various players we need to promote the adaptation of new systems for exploiting renewable energies in renovation works. Innovation in these areas is no mean feat. The introduction of renewable energy elements is progressing at a fast pace and the new systems have not been tried out that much and the technology becomes obsolete very quickly, whilst we, all the players working in renovation,

As renovation enterprises, we have to promote the adaptation of new systems for exploiting renewable energies.

need to offer systems that are validated and with a guaranteed durability. New technologies enable or require us to change our mobile telephones or computers every three years. Can we do the same in energy renovation work?

Despite the difficulties, we must not lose heart. The challenges we have could be summed up in four lines of action:

- Working for the professionalisation and specialisation of all the renovation sector's players. Players who act or have influence in the sector.
- Improving the integrated management of renovation work so that it promotes a culture of collaboration between the various players at every stage. From diagnosis to reception of the work and its maintenance during its useful life. With integrated and collaborative management.
- Working to achieve stable, consensual sector policies that are maintained over time. Which enable the sustainability of the professional work of all the players. There can be no training for businesses or professionalised players without stability. Obtaining support from the authorities to disseminate a programme to promote renovations and energy saving. Outreach programmes aimed at city residents through civic influencers.
- Promoting the incorporation of young people into the renovation sector through practical training by bringing apprentices back into an updated vocational and occupational training programme. ◙



The passive behaviour of buildings accounts for 20% of our country's total energy consumption.

CHAPTER

Carme Borrell: "Physical housing conditions influence people's health"

Conversation with the Manager of the Barcelona Public Health Agency



Núria Pedrals Architect. The conversation with Carme Borrell focuses on the relationship between housing conditions and people's health. The problem of energy poverty, which affects a large number of families, has come to the fore over the last few years. Up to now, to alleviate such situations, the Administration has been covering the payments of energy-consumption bills, but this will end up a bottomless pit unless some other type of long-term measure is taken.

We have a very extensive constructed housing stock with very inadequate qualities as regards building shells; this stock has to be renovated for adaptation to today's quality requirements and because, in any case, renovating is much cheaper than building anew.

Renovating buildings has a high initial investment cost but guarantees, through passive measures, the improved behaviour of dwellings, a reduction in energy demand and substantial improvements to comfort conditions, even though there are no extra energy contributions.



Borrell is a physician, specialising in preventive medicine and public health.

Carme Borrell, an expert in public health, guides us through the results of the studies conducted by the Barcelona Public Health Agency and gives her opinion on what she believes ought to be prioritised.

What relationship is there between housing conditions and people's health?

This is a relatively new topic in this case; we've been examining it for seven or eight years now. We began working on a project called "Sophie" under the European Union's seventh framework research programme. The first thing that we considered was how to establish a theoretical framework to help us understand the relationship between housing and health.

This framework included four large sections or blocks. The first emphasised the labour market's general conditions, economic policies and the welfare state's policies. These policies related to both housing and health.

The second block were the structural aspects relating to housing, that is, housing and market policies. Bear in mind that, in our country, housing depends on the market, which is not the case in other countries where policies have changed their market.

These two large blocks have an impact on the other two: one is housing itself and the other is the neighbourhood. It makes no sense taking housing out of the context of neighbourhoods: it is a very different thing living in a neighbourhood with services, facilities, green spaces and social cohesion, from living in a neighbourhood that lacks all of these. That is why it is important to bear in mind this aspect which is directly linked to habitability.

The fourth block is housing; this block can be subdivided into two sections: social and physical.

The mainly social section has to do with housing affordability. The crisis years in the Spanish State saw some 600,000 foreclosures, resulting in the eviction of 370,000 people.

"The Authority ought to take more proactive action to incentivise renovations."

Physical housing conditions also have an influence on people's health. Living in housing with damp or mould can bring about a series of illnesses such as respiratory diseases. What renovations do is improve the physical conditions of dwellings.

And added to that, the cornerstones of inequality, the fact of being a man or woman, belonging to one social class or another or being an immigrant. All these aspect end up having an effect on health.

We reviewed the bibliography through project Sophie and explained the importance these aspects had for the population's health.

Do you believe that the renovation policies currently being implemented are appropriate or sufficient?

I'm no expert here but we have been considering the issue, seeing as I'm surrounded by architects. From what I understand, the aim behind most of the policies being implemented is to provide financial aid, something that is hard to obtain, given that the procedures are often complicated.

They're probably necessary but insufficient, because, despite their availability, a large part of the population lacks the financial resources to be able to afford to pay for the rest of the renovation work.

There are a few specific calls for subsidy applications, known as "high-complexity calls", which are aimed at such groups of people where the entire costs of the work may be paid for.

It's a good thing that the entire costs of the work can be paid for in such cases, although, in addition to aid, the Administration ought to take more proactive action to incentivise renovations.

It was within the framework of this European project that we conducted a study that analysed the impact on health of renovations carried out in



Physical housing conditions have repercussions on people's health.

buildings in several neighbourhoods, especially in Nou Barris, from the 1970s onwards.

Interventions basically involved thickening the exterior of walls, adding insulation (*retrofitting*), insulating roofs and installing lifts.

We also compared the association between cold and the mortality rates of the people living in renovated buildings and those of people living in unrenovated buildings. The study showed that, on cold days, the mortality rate of women was lower in renovated buildings. These are good results, as they highlight a very important and objective health indicator which is mortality rates.

The opposite effect was found in the case of men, whose mortality rates even increased after a few days of cold weather. One of the possible explanations was that the dwellings were not always used correctly. One example is ventilation, which, if not carried out, can end up harming our health.

Besides illnesses such as arthritis and rheumatism, it is the respiratory diseases that are affected the most, especially by cold weather. These are followed by the cardiovascular ones.

It may be somewhat collateral, but we have also been working on the effects on health in brandnew dwellings, in this case, in assigned-for-use cooperative housing (the La Borda¹ project). One of the aspects highlighted by the people living in La Borda is that they do not get cold there. Residents in La Borda keep their flats at 18°-19° C in January, without having to turn on the heating, thanks to the building's excellent planning and insulation, in other words, those who have just moved in to the block already note how it has improved the quality of their lives and their health. The study we have launched is aimed at monitoring the people

"Energy poverty normally combines with other types of poverty."

who move in to one of La Borda's dwellings and we expect to see a positive impact on their health in the future.

When you're cold you're very inactive, you only think about being cold and having to wrap up, you're in no mood for doing anything; the concept of *energy poverty* crops up when there is a large part of the population unable to meet their utility bills to keep their homes warm.

Cold affects both our physical and mental health. Energy poverty also affects our health. It ought to be noted that energy poverty normally combines with other types of poverty: it's not just about not having the money to keep your home warm, but also about not having enough money to eat; you have to choose between keeping your home warm or eating. These various uncertainties the uncertainty of not being able to pay for your home, the uncertainty over food and so on — and energy poverty are usually linked.

Policies to alleviate energy poverty ought to take these three aspects into account. Firstly, providing financial help for households that are unable to pay; secondly, monitoring energy suppliers — this is a political issue but it can be done to ensure that prices do not continue to rise (the price of energy in the Spanish State is among the highest in Europe) and thirdly, renovating. It makes no sense to hand out aid coupons if buildings are not renovated.

When it comes to housing policies, the emergency is using up a large part of our resources, but we need to go further and implement long-term measures.

Energy poverty is an important issue; I don't believe anyone has done their sums properly in this country. People in England saw it was worth their while paying for renovations, which is cheaper than having to pay for health care and more effective in the long term.

^{1.} La Borda is an assigned-for-use housing cooperative provided by Barcelona City Council. It opened to the public a few months ago.

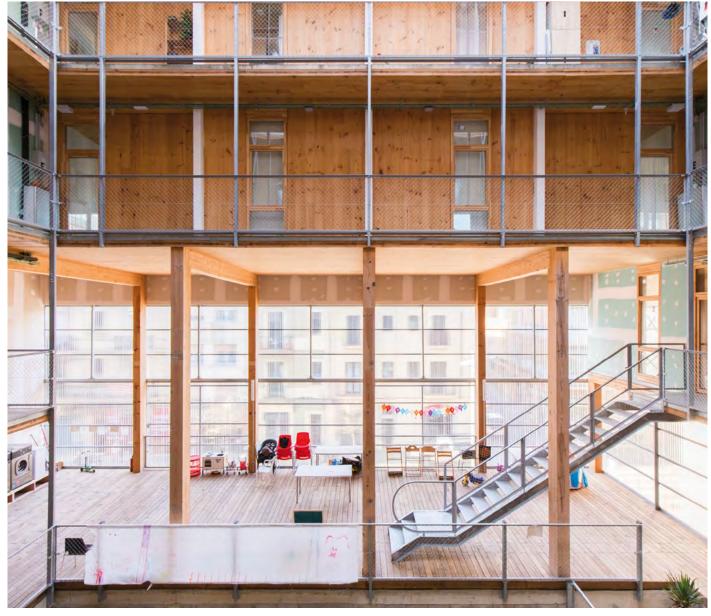


Image of the inside of the La Borda building, in Sants-Montjuïc.

It would be a good thing to conduct an in-depth study of that over here. Bearing in mind how expensive health care is in England, that it is much colder and that more energy is needed to keep homes warm, it is hardly surprising that a financial study would give these results. It would be very interesting to find out the reality in our country.

What they're doing in England is public policy, and it has been demonstrated that it's worth it for them for improving health and preventing illnesses.

It is often heard in cities such as Barcelona, with a Mediterranean climate, that it doesn't get cold, that it's not worth it to renovate, that it is very expensive, that the sun can warm up people's homes.

I'm no expert in the financial costs of renovation, but what is clear is that cold temperatures in homes affect people's health much more in countries in the south than in countries in the north of Europe. Even though it is colder in countries in the north, they have much better prepared dwellings and therefore live much more comfortably. Over here, if we don't renovate our homes, we can still live in them; in the north, unless people renovated their homes, they could never live in them.

There's also the issue of hot weather; that's practically never taken into account. A few summers ago there was a very severe hotweather crisis in Europe, and people died as a consequence of the unexpected heat wave. Excessive heat clearly affects our health and it will get worse with climate change.

We studied the 2003 heat wave here, as it was very serious. Several studies confirmed the rise in mortality rates that summer. The repercussions in northern Europe were considerable, because people there were not used to such high

"Excessive heat also affects our health and it will get worse with climate change."

temperatures. Here renovations are key, because excessive heat, as with cold, can be kept at bay if the building is well constructed.

What do you believe ought to be the priorities for improving people's well-being and health when it comes to housing?

We live in a country where housing policies need to improve a great deal. It has to be made clear that we have a very serious problem with increasing rental prices and short-term contracts. Political courage is needed to push ahead with genuinely transformational measures.

Affordable housing requires such commitment, paying rent is so complicated, that renovation policies are taking a back seat. There ought to be increased public spending on housing policies. Of course, we should note that there are a lot of interests in the way; one of the cornerstones of this country's economy is the construction industry and the banking system is the one that can provide funding.

We ought to give greater priority to public housing policies to ensure homes are not commodities but a common asset. The right to decent housing ought to be guaranteed for everyone. Policies such as increasing the public housing stock and controlling prices and lengths of leases ought to be crucial. I understand these are priorities but we obviously should not forget about renovation policies.



Renovating buildings reduces the demand for energy and improves comfort conditions.



Annexe: examples of renovations



Series of renovated buildings in the Canyelles neighbourhood.



Renovating the Canyelles neighbourhood

A swe drive along the Ronda de Dalt de Barcelona ring road, we cannot help but notice the changes that the Canyelles neighbourhood, located in the highest part of the city, has been undergoing. Made up of a series of detached houses and 14-storey buildings, this neighbourhood has been gaining a personality of its own and seeing changes in the colours of its building façades. These apparently formal changes conceal a much more profound renovation process.

The Canyelles neighbourhood was built back in the 1970s to provide accommodation for the city's burgeoning population, some of whom had come from other redeveloped neighbourhoods. The façades of its buildings have been in need of renovation because of carbonation (decomposing concrete) problems.

This need has offered an opportunity for carrying out fuller renovations as well as improving the façades' insulation.

This was all explained to us by César Gutiérrez, the Chair of the Residents' Association, who lives in one of the renovated former detached houses and has been at the fore, through his enthusiasm and conviction, of a good part of the renovation process.

He tells us that, given the need to carry out work to monitor the carbonation of the concrete, the opportunity was taken to participate in the Grow



Smarter European project alongside the cities of Stockholm and Cologne. The process, which was led by the former Barcelona Housing Trust, applied for extraordinary European funding, and the Catalan government, Gas Natural and the UPC also took part to assess the results obtained.

The project, explains César Gutiérrez, included insulating façades and roof spaces and, in the case of César's house, replacing the windows with recycled aluminium with thermal bridge breakage and Venetian blinds for controlling the effect of the sun on building façades.

Besides these building improvements, many of the flats in his former detached house are monitored — "the ones that have Wi-Fi"—, so residents can know at all times what their energy consumption is and which devices consume the most, as there are monitors that are organised by area, for example, the kitchen, the living room and the utility room, where the boiler is for heating.

César is very proud of the entire process and its results, although "not all residents wanted to have their windows replaced", and missed a good opportunity to do that, given how obvious the improvement is.

He shows us his flat and comments that the blinds, which work electronically from inside "protect against sunlight in the summer months". He is only too aware that the façades' insulation is improving the thermal conditions in his home not just during the winter, with the consequent savings on heating — "we have it on much less than we



used to ", he remarks — but also in the summer, adding that: "We now hardly ever turn on the airconditioning". The dwelling behaves much more uniformly during the year. The thermos flask effect arises, conserving hot and cold temperatures alike.

César is also very aware that all this renovation has had the effect of raising awareness of costs among residents. They now have the opportunity to manage the energy consumption of their homes. The monitoring enables them to see exactly what is being consumed, when and where, as shown by the devices located in the various areas.

They still have not quantified the exact financial savings they have made, because, as he explains, "it's very hard to know from the bills, as prices keep on going up". Of course, they can find out how much they've reduced their consumption by, and he insists that it is a significant amount, although "it is difficult to know the precise percentages", since each resident has a different type of consumption behaviour. The project's initial estimates anticipated savings of between 30% and 40% of the initial consumption of residents who regularly used the heating and air-conditioning systems.

The process among residents "was not easy", according to César, as not everyone was convinced about the need and opportunity for taking part in the Grow Smarter project. Now, however, a few months after the work's completion, everyone is happy. It was also possible to do the works from outside, in other words, the inconvenience that residents had to put up with — and there was some, of course — did not include having to leave their homes.

In any case, the homes have become notably more comfortable, as César says, because their residents no longer have the feeling that their place is cold or too hot when they come home. The overall assessment of the process is very positive, residents are aware they have taken advantage of an opportunity that is not available to everyone and they believe their example can serve other neighbourhoods and communities that have to renovate their buildings.











Renovating Lope de Vega, 111

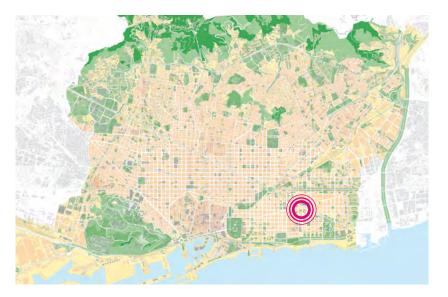
hen we arranged to meet Carlos Pérez for an interview in Carrer de Lope de Vega, 111, he suggested it would be better to meet in Carrer de Pallars, where we could get a better view of the façade.

In fact, it is from the square that is currently being completed, open as a public space along Carrer de Pallars, that he explains this unique project combining energy renovation and urban regeneration. The renovated façade corresponds to the lower part of the Lope de Vega estate, 111. It formerly looked onto a wall, as Carlos Pérez tells us, but now it has the privilege of looking onto an open, public space, with excellent light facing east and extensive views.

This intervention was carried out for several reasons. Firstly, the keenness of the Cornerstone company, located opposite it in the same block, which wanted to dignify the lower part of its building, which would be looking onto the future square on Carrer de Pallars.

Secondly, the aim of an owner, in this case of the entire building at Lope de Vega, 111, who understood that improving the building's posterior façade would bring considerable value to the dwellings.

Thirdly, the father and son architects who designed the project and managed the works, Carlos Pérez Sánchez and Carlos Pérez Mir, who quickly realised



the possibilities that would be offered by carrying out a different kind of project on this façade.

Fourthly, the possibility of taking part in the European-level Grow Smarter project, and applying for extraordinary subsidies given all the above circumstances.

The initial façade looking onto the square was exactly the same as the one of the other residents, as can be seen from the photos. The central idea of this renovation was to enlarge the existing windows and add balconies to improve the features of the homes, and enable residents to privately hang out their clothes.

As the architects explain, this improvement involved "moving out of darkness into the light through urban regeneration". In effect, extending the original windows, both in height and width, to the point of turning them into balcony doors; incorporating balconies large enough to install a table with chairs; incorporating blinds for filtering sunlight and creating a very pleasant private ambience inside the balcony, as well as the considerate gesture of designing a railing to hide clothes hanging out to dry while adjusting the flow of light and views; these are features which, along with the outside insulation, added to the entire facade and the interior renovation of some dwellings has brought extra quality and comfort to the habitability of the dwellings while reducing their energy bills.

The project was rounded off with the design of a new fence on the ground floor facing the square, leaving a few terraces in the dwellings on that level and allowing a degree of visibility of the exterior while providing security for the residents.

Not everything in the process was easy, despite its highly satisfactory results, for either the owners or the tenants. The building process was slow and difficult. What is interesting, however, is the multiple agreement between Barcelona City Council, the Cornerstone company, Gas Natural and the owners, that enabled the project to go ahead. The project also offers the possibility of being replicated on the other façades looking onto the same square and which have the same features.

These types of small-scale interventions represent a considerable improvement not just for the users of directly renovated buildings, but also for the neighbourhood's other residents, who will enjoy a well-conditioned free space with renovated façades on view.









Façade of the renovated building on Pg. Sta Coloma, 55-71



Renovating the public housing stock

The field of renovation is very broad and complex. The Barcelona Municipal Institute of Housing and Renovation (IMHAB) has been working on several lines to promote renovations of buildings. As regards privately owned buildings, the best-known and usual line consists of sinking-fund subsidies that are awarded through annual calls for subsidy applications, which fund part of the renovation work being carried out by owners.

There are also other renovation methods, however, which are being carried out in the area of housing owned by the municipal authorities. This is an expensive renovation policy, given that, in some cases, we are talking about the acquisition of entire privately owned buildings. Most are in poor repair owing to neglect by their previous owners and usually have differing degrees of occupancy, from both physical and legal points of view. In other cases they are buildings owned by the City Council and managed by IMHAB that require renovation.

In all, IMHAB manages over 8,000 dwellings in various ways. Most are intended for social or affordable rental housing.

In the case of newly acquired buildings, the purpose of such purchases is to fully renovate the building. In some cases, even the type and number of dwellings are changed so they can be



allocated to social or affordable rental housing. There are several buildings that have already been renovated, and where the homes have been awarded to various candidates.

Managing these projects and works is very complex and requires not just financial resources but also time and teams of people specialising in several aspects of management. Legal management is needed, owing to the range of technical legal situations in which many of these buildings are occupied, to assess the state of the buildings' constructive, structural, habitable and social aspects, in order to find out the needs of its residents and be able to act accordingly.

The buildings are studied case by case. The cases vary and require each project to be specified. The occupants' situations are assessed, such as whether their leases have expired or are current or they are tenants at sufferance. An initial diagnosis of the state of the building is then made and plans drawn up, even though nothing but a rough draft can be done here.

The next step is the competition for the technical project . The winning team carries out the project in 3 stages. The first stage, during which a reliable draft is made of the building's plans; the second stage, involving a diligent diagnosis that includes taking material samples to find out the state of the building's structure, walls and building elements, and the third stage, consisting of the final project whose work can be put out to tender.

This takes place at the same time as the social and legal work is being carried out to determine residents' rights, duties and requirements.

We shall highlight two of the buildings recently acquired by the City Council and currently at the renovation-project stage: both are located in Ciutat Vella, one in Carrer Hospital 116 and the other in Carrer Lancaster 7-9-11.

Carrer Hospital, 116

The Carrer Hospital 116 building project is at the diagnosis stage, following the reliable drafting of the plans of its current situation. Pathologies of varying importance were detected in practically the entire building.

The project proposal being worked on is to convert its 21 current dwellings into 17, as some of the present "dwellings" can no longer be regarded as such but rather as irrevocable sub-standard housing both in their floor area and in their habitability conditions.





The comprehensive renovation project, in addition to reducing the number of dwellings, provides for the installation of lifts, renovation of the building's façades and roofs in accordance with energy-efficiency criteria, to ensure the building's good behaviour in its own right, with little need for external-energy contributions for its comfort. A study is being made of the possibility of putting in solar panels if there is sufficient sunlight, and otherwise an aerothermal installation so a comfortable temperature can be obtained.

Carrer Lancaster 7-9-11

The Carrer Lancaster 7-9-11 project deals with a similar situation to that of the Carrer Hospital project but involves the additional complexity of sharing part of the building with the owners of a car park.

Under the plan, 9 and 11 will have a unified main access point, the old staircase will be replaced with a new one and a lift will be installed. The project that won the competition intends to reduce the current number of dwellings from 42 to 32, as there are presently "studios" in which people are living which fail to meet minimum habitability conditions and therefore have to be converted.

The comprehensive renovation work, in addition to changing the type of housing units, will involve renovation of the façades and roofs in accordance with energy-efficiency criteria and the installation of lifts to ensure accessibility.

While there is no obligation for either project to abide by the Technical Building Code, an attempt will be made to come as close as possible to meeting it for the sake of providing the best possible conditions of comfort, habitability and health for users.

Both projects respect the external appearance of their buildings, as they will be restored and renovated keeping the current façades.





Summary of the Lancaster Renovation Project 7, 9 i 11.

Passeig de Santa Coloma 55-71. Edifici Titànic

Another of the projects being carried out by IMHAB is its renovation of the Edifici Titànic, on Passeig de Santa Coloma 55-71, in the Sant Andreu neighbourhood. The renovation work was completed in mid 2018.

Owned by the City Council and built in 1999, this building houses 207 dwellings. Given its age, some of the building's features which had deteriorated needed renovating, though not the entire building; nor did the dwellings require conversions, as they already satisfied the habitability conditions in force in 1999 and continue to do so today.

The renovation basically involved improving the façades' energy performance and the formal aspect of the building that had deteriorated over the years. The façades were improved by means of SATE type ventilation and insulation through the exterior. The railings, latticework and window shutters were all replaced; all these renovations helped to raise the building's energy-efficiency certification by two letters, from E to C. The roofs were also repaired and the outside walls painted with anti-humidity paint and in several colours to embellish the building's external appearance.

A system was installed to enable the continuous monitoring of electricity costs and an accurate determination of the dwellings' energy consumption. Besides acquiring all this knowledge, the monitoring system also plays an important educational role for users, as it provides them with the information they need to better manage their homes and avoid unnecessary energy expenses.

We talked about this with one of the building's residents, who did not wish to be named. Replying to the initial question on their assessment of the building's renovation, they emphatically stated that they found the results "positive, above all for the building's embellishment and formal appearance", and as regards its behaviour in the winter, they pointed out it was "less cold", and confirmed this by mentioning their gas costs for heating had gone down.

In general, they thought that the renovation was working very well in most of the flats. It had improved the level of comfort in both summer and winter.

With regard to the monitoring, this enabled them to constantly see their electricity expenses, which had not substantially dropped in their case, but which probably had in other flats. What was clear, however, was the drop in their gas bills.

They were very happy with the formal changes, with the dignity they had reclaimed from the renovation of the façades. The resident commented that they were kept informed by the heads of the various residents' communities throughout the preparation process and subsequent work.













