# The National Devastated Regions Service in Tarragona: Building Techniques in House Rehabilitation

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On the night of November 11, 2005, a terrible accident took place in Tarragona: the building at No. 72 of Rambla Nova collapsed as a consequence of a gas explosion. The mutilated structure looked like a dantesque image. The explosion exposed the inner skeleton of the house, a pitiable view for the onlooker, thus allowing a full appreciation, until partial demolition started, of the remarkable difference between the original structure, built in 1884 according to the project of master builder Josep Reboltós Tomás, and the newly superimposed (ca. 1990) attic. Most likely, the stronger old part acted as a pressure pot wall, so that little trace was left of what not long before was a living place. Because of the heavy structural damage, subsequent technical reports unanimously recommended an almost total demolition, sparing only the stone on the main front.

Looking at the ruins was not unlike the view of bombed buildings during the Civil War (19 July 1937; 12 January 1938; 18 March 1938; 26 July 1838; 7 November 1938; 14 January 1939…). Obviously, the circumstances were very different. The Rambla Nova - main thoroughfare of the 19th century enlargement - was also affected. The study of the rehabilitation of its buildings will allow a better understanding of the evolution and application of the different building techniques employed in Tarragona.

Under Francisco Franco's dictatorship, a quick recovery to apparent normality had been planned for all affected towns and villages. The *Servicio de Regiones Devastadas* - by means of subsidies, loans and tax exemptions - fostered a reconstruction policy within a nation that was facing a deep economic, political, cultural an social crisis. The national reconstruction turned out a useful propaganda. The review *Reconstrucción* (1940-1956) was the voice of the *Movimiento.*

## THE *SERVICIO NACIONAL DE REGIONES DEVASTADAS Y REPARACIONES*

The *Servicio Nacional de Regiones Devastadas* was created by a 25 March 1938 decree followed by an 11 June 1938 ordinance, with the explicit purpose of "attaining the immediate reconstruction of the Spanish war-damaged estate", and with the outspoken necessity of "following a plan based on a fundamental unitary criterion". Both orders were issued while the war was fully going on. In August 1939, as a reorganisation move, the Service was transferred from the *Ministerio del Interior* to *Gobernación*, ascending to the general direction rank. The *Dirección General de Arquitectura*, supervising all personnel working in architecture projects for the public administration, and the *Instituto Nacional de la Vivienda*, under the *Ministerio del Trabajo*, were created in the same year. On 25 February 1957 the *Ministerio de la Vivienda* was created, absorbing both the *Instituto Nacional del Vivienda* and the general directions of *Arquitectura y Urbanismo*, including the *Servicio de Regiones Devastadas*.

Figure 1. House Dolors Miró, San Pere, 35, destroyed 12 January 1938 (AHDT)

Figure 2. House Dolors Miró, San Pere, 35, destroyed 12 January 1938 (AHDT)

Figure 3. House Maria Rosell Cañellas, Apodaca, 44, destroyed 20 March 1938 and 3 June 1938 (AHDT)

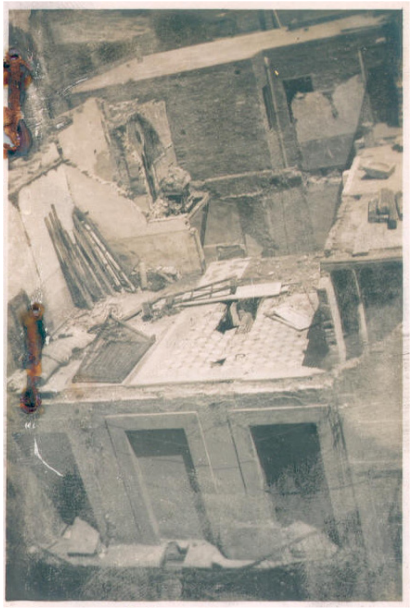

Figure 4. House Maria Rosell Cañellas, Apodaca, 44, destroyed 20 March 1938 and 3 June 1938 (AHDT)


Figure 5. House Magí Salvany, Rambla Nova, 72 destroyed 11 November 2005 (Marga Mallol)


Figure 6. House Magí Salvany,Rambla Nova, 72 destroyed 11 November 2005 (Marga Mallol)

The above national reconstruction guidelines are a faithful picture of the regime's postulates. The Service endeavoured to control and watch over "all general or particular project whose purpose be to restore or to rebuild any property damaged because of the war" and to prohibit undertaking any enterprise of the kind without a permit. On 25 February 1939 the subcommission for Tarragona was established, with the following members Antonio Iturmendi (Civil governor), José María Monravá

López (architect), Enrique Fontana Grau (engineer), José Silván López (State attorney) and Luis Carbó Pareta (Secretary to the Provincial delegation).

> The subcommission started working with true enthusiasm, in order to insure efficiency and the necessary intensity to the assigned task. To this purpose, it was resolved to get in touch with the local and provincial authorities in order to collect as many data as necessary, to make real and effective the National Government enterprise.
>
> (AHDT – SNRDR – CPF1)

I doubt that the working climate was actually as shown above. As a matter of fact, a questionnaire was sent to the municipalities in order to acquire statistical data for the evaluation of the material damages caused by the war. Controlling the administrative flow was a constant worry of the regime. The annexed documentation was dispatched with exemplary zeal according to the norms issued on 19 June 1939. The number of required documents was reduced after a few months, in order to speed up the administrative management and to achieve the reconstruction "within the smallest possible time" (Circular 28 November 1939). All this with the clear aim to make project supervision, control an censorship easier. The provincial subcommissions informed about the necessary measures for the reconstruction plan, thus giving impulse to the elaboration of an integrate national project. Spain was a unity: particular and personal actions were not to be tolerated. The 9 September 1939 law provided for participation of all the owner affected by the "marxist devastation", on condition that the same showed a proper moral conduct and religious feeling, had never been associated to any political or trade-union organisation adverse to the regime, and were ideologically in agreement with the Glorious National Movement.

The first National Assembly of Architects took place at Teatro Español, Madrid, in June 1939, with the aim of defining a new national constructive poetics which should include all aesthetic constants of Spanishness. The plan failed. Luis Gutiérrez Soto stated that "the new architecture was to be the Nation visible façade", whilst José Fonseca talked about "undertaking promptly executable plans … not definitive ones". They advocated for an architecture of outward appearance, based on imperial nostalgia, that was to take rid as soon as possible of all the remnants of the war.

The Modern Movement, considered a peculiar tendency of the republican period, was incurred censure from the ideologists of the Regime. Almost all the members of the GATEPAC had to opt for a forced exile. Many were banished from their professional activity in Spain. Luis Gutiérrez Soto, who had been on close terms with the GATEPAC, after his experience as an air force pilot on the winners' side turned out a ruthless advocate of traditionalism and historical forms, remarking that "when the time of reconstruction came, the national and traditional feeling imposed itself in front of all considerations". The new architecture promoted by the *Regiones Devastadas* office was to be one of outward appearance with a firm reference with the style of Habsburg, Villanueva or Herrera's Escorial.

The inspiration to continuity on a traditionalist and neo-imperialist path was manifest in the newly erected buildings in the Rambla Nova. On April 1947 José María Monravá López submitted his project of a parish church and parish housing centre in the prolongation of the Rambla Nova - then Rambla del Generalísimo - (La Popular, 2). The façade composition and volume are imbued by classic forms. However, all this is outward appearance. The constructive elements and material have nothing to do with traditional practice. Instead of natural stone, all the ornaments such as "columns, pilasters, platbands, doorways, percloses, tower pilasters, cartouches, etc." were all made out of artificial stone. Everything is fictitious. Monravà's professional life, as well as Soto's, shows a coming back to tradition. In the 30's he designed buildings of rationalist inspiration in Tarragona and Palma de Majorca, under financing from the Trade-Union office; in 1940 he designed the house Alegris y Descanso, made of Beckmbau pre-fabricated blocks (Marquès de Guad-El-Jelú, 1-10). On 27 January 1951 Antoni Pujol Sevil designed the new building of bank La Caixa, intended for the bank's Social Security offices as well as for rental housing (Rambla Nova, 100). The proposed building technique was the following: foundations and walls of 0'45 m Portland concrete under the main walls and brick for the remaining walls - 0'45 m, 0'30 m and 0'15 m - beams and pillars of reinforced concrete, main beams of laminated iron and the front ornament of "granulating hammer stone masonry (except the pick-hammered stone socle) at ground floor; artificial stone and white cement for the rest of external walls: visible brick piers". Again, all the repertory of academic architecture - as testified by platbands, cornices, corbels and tympana- was resorted to.

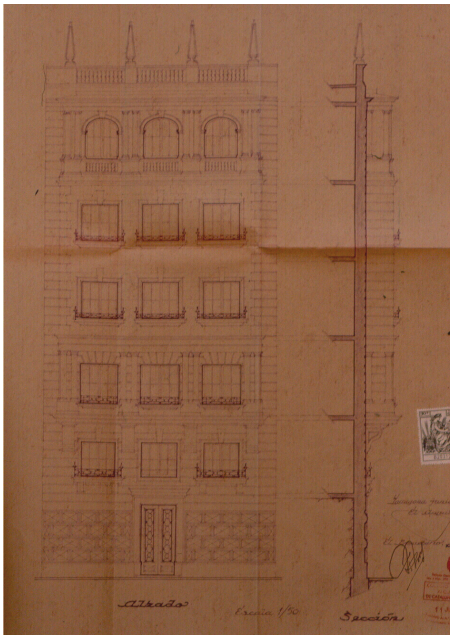

Figure 7. House Teresa Magarolas /Fernando Pons Prats – José María Monravá López, 1 June 1946. Front view. Rambla Nova, 3 (AHMT)

Figure 8. View of Rambla Nova 1-5 (EOH)

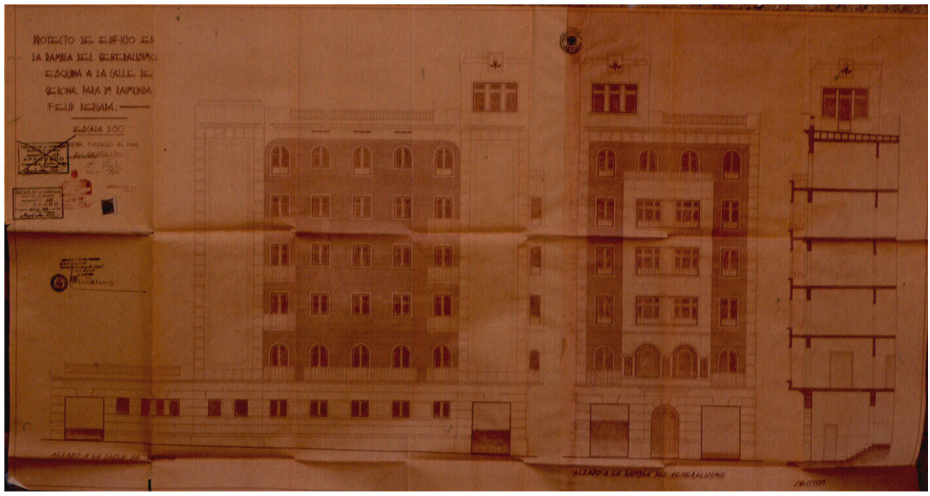

Figure 9. House Raimunda Felip Bergada – Antoni Pujol Sevil, 1 February 1946. Front view. Rambla Nova, 15 (AHMT)

Little by little, all vacant lots of the Rambla Nova, as well as those with completely ruined construction, were filled with an architecture based on forms of a remindful character which had been somehow developing during the 30's. The city middle class identified itself with Classicism and Eclecticism better than with a façade with no reference to the historical past. From the

documentation in the Archivo Municipal of Tarragona (AHMT), we find that only seven building license were granted between 1939 and 1950 for the erection of new private dwellings along the Rambla Nova. Not all were carried out. The first permission is from 1945. Almost all the houses were designed by Antoni Pujol Sevil, except one by José María Monravá López - municipal architect-. Actually, it's in Monravá's project where the greatest number of architectonic pastiche is appreciable, in favour of a new order of traditionalistic character (House Teresa Olivé Magarolas / Fernando Pons Prat – José María Monravá López, 1/6/1946 - Rambla Nova, 3-3bis).

Figure 10. View of Rambla Nova 25-15 (EOH)

Often, the adoption of a particular building technique is a consequence of some external conditioning. In this case, the conditioning was the shortage due to the madness of a war. The National Government issued a number of regulations concerning the use of materials in general, and iron in particular. Furthermore, new construction was subsidized by the law of 25 November 1944, which established work specifications according to the building category. Other measures were issued in order to ease the unemployment - law by decree 19 November 1948-. Some facts were peculiar to Tarragona and its Rambla Nova. Surprising as it may be, there was land still to be levelled according to an enlargement approved in 1857. Some lots between numbers 3 and 23, as

well as between 82 and 86, had to be levelled. Numbers 82-86 were allotted to the Instituto Nacional de la Previsión, according to the plans submitted by Juan de Zavala Lafora on 1 May 1946. In order to blast some limestone - *llisós* - use of dynamite was allowed. The abundant stone supply fostered the stone-cutter trade growth. Thus, in 1945, Miguel Melendres Rosich asked for authorization to raise a shed for a stone-cutting workshop in Avgda Ramón y Cajal - at one end of the Rambla Nova – based on Francisco Monravá Soler's plans.

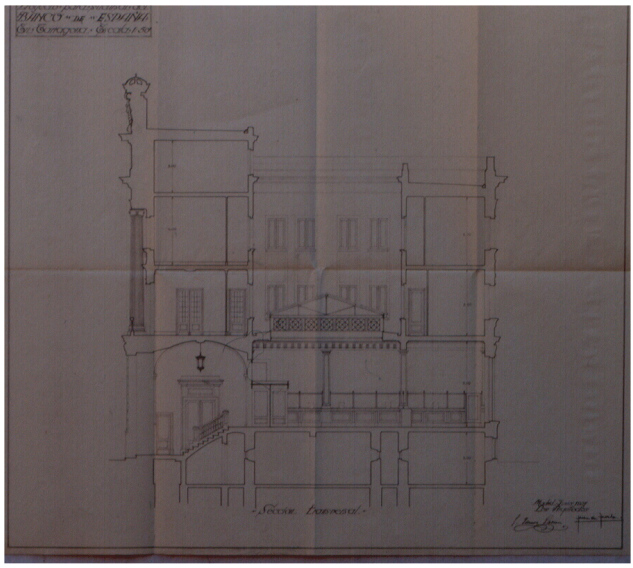

Figure 11. Banco de España, J. Yarnoz, Juan de Zavala, 24 January 1928. Section. Rambla Nova, 101 (AHMT)

During these shortage years, recycling of the stone material from levelling was not continuous. The Instituto Nacional de la Previsión chose to buy the limestone needed for the main façade from an external quarry. It's worth noting that the project had been drawn up by an architect from Madrid central services, not in touch with the local context. Monravà, on the contrary, recycled the stone from the *llisós* for the lower part and for wall masonry at No. 3-3bis. In some cases, levelling was not performed due to cost considerations. That was the case with the unfortunate project of No. 13 house (house Roque Pallejá Barceló - Antoni Pujol Sevil, 27/7/1945). Only the foot-way and the porter's lodge side were made level, as "no shops are foreseen, but entresol flats". In 1947, Roque Pallejá was allowed to perform bore-hole on that property.

On the whole there was no unanimous approach, and the choice of one or another material depended on the owner and the architectural design. Artificial stone was generally preferred for decorative details because of lesser cost and easier availability. Some structural and constructive details were more or less precisely regulated by the 1944 law. As a general rule we find: artificial Portland concrete (150Kg/m$^3$); foundations; 0'45 m masonry common walls; 0'45 m brick walls at

lower part, 0'30 m for the rest of the front, 0'15 m for the remaining walls except 0'04 m internal partition walls; reinforced concrete main beams -Castilla, Bustems, Palosca-; double hollow brick flat tile roofs and small vaults; insulating air chamber terrace; fibre cement –Drena- soil piping; lead water piping; Bergmann tubes for electrical installation; hydraulic lime external plastering and tempera finished plaster of Paris for interior walls.

All this could be a biased notion of the architectural reality of one of the most important thoroughfares in Tarragona. It's worth asking: which were the distinctive features of the original architecture of the new middle-class district –Ensanche-, and of the Rambla Nova in particular?

**THE RAMBLA NOVA AND ITS ARRANGEMENT**

To analyse the building techniques employed in the Rambla Nova since 1858 up to 1936 means making a summary of the city architectonic transformation. A long urbanisation process favoured a slow property occupation. We already mentioned the levelling performed under the Dictatorship. The different solutions tested there are a good example of a quality architecture -directed to the more favoured classes- situated in the main avenue of the new middle-class district.

Apart from the actual buildings, we may get information from the urban police rules in force at that time. Since August 1929, the supervising architect issued a detailed report of the works to be carried out in the first category streets. The report dealt with: construction main features, materials, drain and sewage system, hygienic conditions, justification of ornamental details and their size, front painting and colours; plenty of documentation for our purpose. This measure has a clear precedent in the public construction proceedings.

The Ensanche was approved on 7 May 1857. The approval concerned the general idea, but the street layout and levelling was carried out by the municipal architects, who were adapting the project according to the new requirements. A leading rôle in the Rambla Nova urbanisation works was played by Magí Tomas Sacall between 1866 and 1883 - his death's year-. Unlike other municipalities, no specific rules were dictated for the area. The general urban police regulation was adopted, as established in 1843 -a close remake of the 1838 one-, and adjourned with the 1911 ordinances. The 1838 tender was published while the city council was looking through the works being carried out at La Marina -first enlargement or Port district-. Between 1815 and 1839 the control of the work licences was under the director of the *Junta de Obras del Puerto*, instead of the city architect like the rest of the capital. This explains the engagement of the engineers in the private architecture development and their concern about the adjustment of the new buildings to the academic postulates. We ignore how much the 1838 tender was inspired by what probably existed for the harbour district. The harbour office retains only a minimal part of the papers dispatched at the begin of 19$^{th}$ century. Anyway, it's very interesting to observe the growing concern for watching over the architectural work.

The control over the external treatment of the property was one main point of concern for the 19th century police codes. The height of the building and slab levels were regulated. Particular attention was dedicated to foundations - size and materials- with a clear aim to ensure structure solidity. As a general rule, due to the geological features of the Rambla Nova -*llisós* limestone- and of the city in general, it was resolved to recommend a width between 0'60 and 0'68 m for the main walls and 0'48 m for common walls. Two wall types -solid brick or masonry- were foreseen. Other points remained undealt with, though national regulations for buildings and structures existed – King's Order 22 July 1864; Decree 8 January 1870; King's Order 12 March 1878…-. The 1911 ordinance was explicit enough:

> The foundation minimum width will be 60 centimeter, and 50 for front walls at ground floor –either dressed stone or masonry-; width at upper floors may be gradually reduced to no less than 40 cm at top floor. If brick is used, minimum width will be 30 centimeter from 1st floor to the top. If other modern building techniques are adopted (reinforced concrete…) the wall and foundation elements width must be justified by means of a calculation report.
>
> (art.640, 1911)

The Mayoralty adopted several measures to avoid lack of embellishment. The issue of allowable height was particularly thorny. The 31 August 1858 meeting agreed on a maximum height of 96 spans (18'72 m) in the Rambla Nova –the same as other provincial capitals as Barcelona- on the even numbers side, and 0'40 m less on the odd numbers –agreement of 25 June 1870-, compared with 90 spans (17'55 m) for the other streets. On January 1926 Enric Sagnier Vilavechia submitted the plans for the new head office of Caja de Pensiones. The building height was 4'60 m more than permitted, besides the corner tower which reached 28'50 m on the front line. Its monumental character and particular architectonic features were determinant for permission, while setting a precedent by relating the height of the building with its peculiarity. During these years, the National Government ratified the King's Order of 9 August 1923 to prevent the construction of unhealthy houses. The problems of sewage network and yard dimensioning were dealt with; on the other side, no mention was made about building techniques.

A general policy of continuity with the use of masonry and brick fabric was adopted. The introduction of new building techniques was slow, even though iron framework and small joist were employed for instance in Banco Nacional de España (J. Yarnoz / Juan de Zavala, 24/1/1928 – Rambla Nova, 101). In spite of this modernity, the exterior appearance was solid, because either the use of dressed stone –*llisós* and from the *Floresta*- and the type of decoration –imbued with classical reminiscences-. Notwithstanding, at least two instances of use of modern building technique in private housing can be mentioned: house Antonio Rosell Fortuny, (Francisco de Paula Morera Gatell, 1/6/1930 – Rambla Nova, 2) and house Firmo Vives (Antoni Pujol Sevil, 18/1/1936 – Rambla Nova, 5). House Rosell is remarkable for the use of prefabricated materials, especially in

the decorative elements of the façade, whilst house Firmo Vives proves that there was no discontinuity between building techniques in the thirties and even twenties and those employed during the post-war period.

> Firmo Vivies Suñé property, affected by aerial bombing, shows the following distinctive features: typical 1st class fabric with external 0'45 and 0'30 m and internal 0'15 m brick walls, small vault on iron small joists and main beams, complete terrace covering on iron small joists.

The plan submitted in 1940 by Antoni Pujol Sevil -the author of the plans issued four years before- was almost identical, although specifying

> The building technique is detailed as follows: artificial Portland concrete foundation laid on the rock.… dressed stone socle. 0'45 masonry common walls. 0'30 and 0'15 m partition brick walls…. Complete terrace covering with double brick flat tile roofs and small vaults, sills and partitions, and fine *Vendrell* brick pavement; thus forming a double roof with insulating air chamber.
>
> (AHDT - SNRDR CPF. 10.135)

The rehabilitation process carried out during the post-war period meant the incorporation of new materials into a traditional context -houses built in the twenties or thirties-, and, at the same time, a continuity with the dwellings built after these years.

**THE RECONSTRUCTION BETWEEN CONTINUITY AND RUPTURE**

Total anarchy reigned during he first months after the war. The technical report issued by the city architect and advisor to the *Servicio de Regiones Devastadas*, José María Monravá López, stated very clearly:

> After liberation, the day 15 January witnessed the sad look of a city that had suffered the violence of the war. A significant percentage of the buildings had been affected by the bombings. Under these circumstances, the first *Comisión Gestora Municipal* adopted the criterion - very appropriate for those times- of giving maximum facilities by simplifying the bureaucratic proceedings and not requiring any application for a licence for most urgent repairs. Eight months have elapsed, and the most urgent works necessary to give a partial solution to the problem of habitability have been carried out or are under fulfilment, other repair works have started, most of them under a criterion of a hygienic improvement of the houses, but everything without the necessary control of the administrative bodies created to this effect, i.e. Municipality and *Fiscalía de la Vivienda*. There is another body, the *Servicio de Regiones Devastadas y Reparaciones*, that also controls and authorises the reconstruction of the buildings damaged by the war. I deem it

> convenient that an application for permit in accordance with the provisions in force be necessary for all the new construction or repair works, because the not-observance, in addition to the responsibility which the Corporation may be charged with, will be detrimental to the city sanitation, since it's precisely the reconstruction work that allows a better and easier attainment of those improvements so convenient for the sanitary programme that our *Caudillo* has undertaken with so great a care. Since the number of works under realisation is great, it would be convenient to fix a term which could expire on next 31 October, with the aim to be in condition to legalise the works already started and to have the procedure fulfilled by 1st November. 27 September 1939.

The edict of Mayor Agustín Sandoval Panasachs was very clear:

> Starting the day 31 of this month every property owner that carry out any construction, reconstruction, repair, refurbishment or improvement of a building without a previous authorisation from the Municipal government will be subject to severe penalties…
>
> (AHMT-F-1939:55)

Thanks to this new measure, the bureaucratic proceedings returned to normality. Since the 1939 edict up to 1950 a score of projects were submitted by Antoni Pujol Sevil, Salvador Ripoll Sahagún, José María Monravá López, plus the rehabilitation of Rambla Nova No. 30 signed by Josep María Vives Castellet. Broadly speaking, the reconstruction works, in addition to restoring the portions damaged by the war, introduced some novelties such as the adjustment of rooms and bathrooms to the new hygienic rules, or modifications of interior distribution -especially from dwelling to bureau.

Carrying out the dwellings rehabilitation as quickly as possible was a must. It was a time of great economic scarcity. This is the reason why, as a general rule, it was decided to reuse the same demolition materials. Sometimes, even basic materials like iron were missing. Also, some works employed a combination of two types of fabric to avoid major costs.

The bombings affected mostly the more brittle parts -window panes-, but also the house structure, especially the covering -terrace-, and the verandas overhanging on the rear fronts. Often, the current local systems and techniques were preferred -vaulted covering Catalan style, masonry or brick walls-. In his technical paper for house Ramón Ravel (Rambla Nova, 42), José María Monravá López wrote: "the construction system is the usual in this place, the main walls are made of masonry or brick, the floors of wood small joist, small vaults and hydraulic flooring, and the housetop as a terrace with an air chamber for insulation (AHMT - F - 1940:172)". Sometimes, the work consisted simply in a hollow brick replacement. This is the case of Salvador Ripoll Sahagún's project for house Magdalena Mercadé (Rambla Nova, 44):

> Everything will be made out with ordinary local materials: brick partition walls, Paris plastered walls and ceilings, new hydraulic tile floor, recycling as possible the existing

ones, thorough remake of the terrace in order to stop the continual water seepage that takes place under raining conditions. Because of thorough crackings, the slab will be poured anew and will be paved with a top layer of fine '*Vendrell*' brick

(AHMT - F - 1941:91)

In some other instances, a change in construction materials was decided. In house Josep Antoni Nel.lo (Francesc Rossell Uget, 26/02/1858- Rambla Nova, 62), Antoni Pujol Sevil chose to "replace the present tile roofing on wooden small joists and beams -in very bad condition-, with a complete Catalan style terrace covering on laminated iron small joists and beams".

Fibre cement or undulate tile was mainly employed in the construction of rear verandas, although we can find it at industrial places like the Salón Moderno (Rambla Nova, 33). In this case, the reconstruction was carried out according to Antoni Pujol Sevil's statement of October 1932. Only damaged parts were rebuilt.

Destruction of a half (the right side) of a covering made out of fibre cement undulate plate on wooden small joists, these latter supported by a wooden framework: the reconstruction concerns a half of the fibre cement undulated plates, approximately one fourth of wooden joists because the rest can be reused, and repair of two wooden frameworks (whose anchors were partially broken) by means of clamps made from two iron U-shapes. Destruction of the scenery covering: the reconstruction will include reinforcement of wooden joists by means of iron small joists (one across supported by four normal ones) and the placement of fibre cement undulate plates

(AHDT -SNRDR - 10:144)

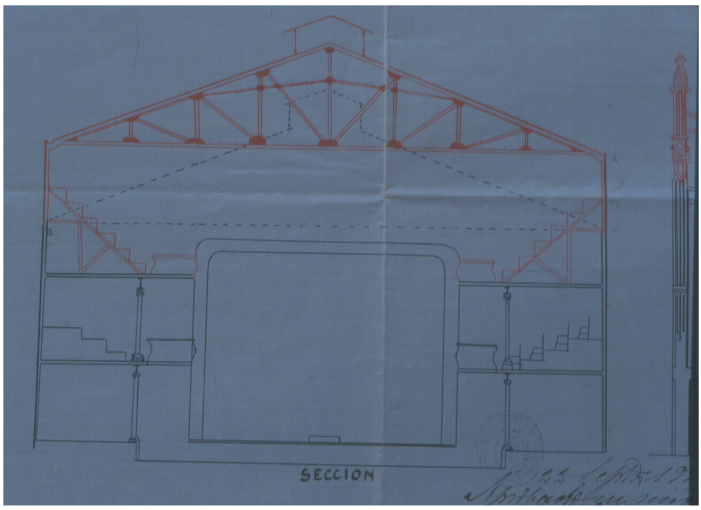


Figure 12. Salón Moderno, Josep Maria Pujol de Barberà, 1/7/1925. Rambla Nova, 33. Section (AHMT)

Iron shortage prompted the use of reinforced concrete beams. The aborted reconstruction project for house Antonio Ferrer Jaumá (Rambla Nova, 39) is a clear example. In 1940, Antoni Pujol envisaged a wrought iron structure, but after 1947 revision had to withdraw to reinforced concrete. The change is manifest on the plant view disposition, where new pillars had to be added.

The adjustment of the dwelling to the new hygienic postulates was especially evident in the construction of lighting yards, built with the clear purpose of eliminating dark and airless enclosures. The refurbishment plan of house Juan Gatell i Badia / Antoni Puig (Rambla Nova, 30) carried out by Josep María Vives, is enlightening:

> Like all that's man-made, the housing conditions change according to destiny, means and other circumstances of the times, and every time bears its distinctive mark; because life is continuity, and it's not possible to preserve dwellings and towns of a given age as in a museum, replacing them by new ones, but on the contrary new progresses and trends are added to them by means of restoration works, only respecting the fabrics that have acquired type characteristics.

And in his final project, as submitted two years afterwards, he stated:

> …being nothing more than an old building, out of date with regard to distribution, with dark and airless rooms already denounced by the *Fiscalía de la Vivienda* which would be better got rid of, where we plan to build a lighting yard, as well as replace the present narrow and tiresome general staircase by a more comfortable and wider one, so that the dwellings harmonise, from an utility and service point of view, with the city district where the property is situated
>
> (AHMT - F - 1943:57).

Finally, the need to create administrative delegations made it necessary to convert a dwelling -preferably the main floor- into a bureau. The Rambla Nova, being one of the main avenues, was among the most selected places. We can list the Delegación de Sindicatos (Rambla Nova, 95), Delegación de Hacienda (Rambla Nova, 30), Colegio de Arquitectos (Rambla Nova, 44), Instituto Nacional de la Previsión (Rambla Nova, 38)… These projects were subsidised by *Regiones Devastadas*. Although, in other cases, some requisitioned buildings returned to their originally intended purpose, e.g. house Dolors Bofarull Pallarés (Josep Maria Pujol de Barberà, 29/10/1921 - Rambla Nova, 37).

During these years, new buildings were erected on unimproved properties -as analysed above- or on parcels corresponding to a ruined house (Entidad Bancaria Banesto, Javier Barroso, 8/2/1943 - Rambla Nova, 63) thanks to the fiscal facilities from the *Servicio de Regiones Devastadas*. In other instances, the intervention consisted in the enlargement and/or remodelling of a well preserved

house with the deficiencies due to the passing of time. Two significant example are: house Joaquim Padrines (Ignaci Jordá i Armalich, 06/01/1871 - Rambla Nova, 57. Comte de Rius, 23) and house Roman Musolas Rafols (Josep Maria Pujol de Barberà, 30/1/1914 – Rambla Nova, 88). House Musolas was rehabilitated by both José María Monravá (1/7/1946) and Francisco J. Barba Corsini (1/7/1951). Both architects were firm in eliminating modernist balconies and galleries.

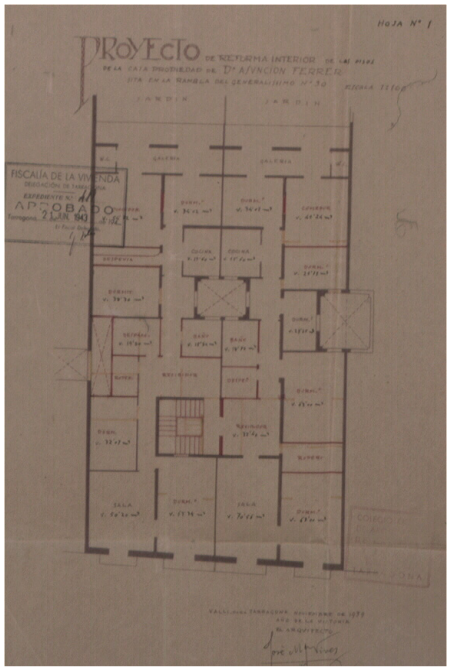


Figure 13. Project of interior restoring of house Juan Gatell i Badia / Antoni Puig, Josep Maria Vives, 1 January 1939. Rambla Nova, 30. Plan view (AHMT)

**AS A CONCLUSION**

The enlargement works, and particularly the addition of a new storey, are a useful key to understand the evolution of building techniques in the Rambla Nova. I'll deal with two peculiar cases: house Francesc Icart (Francesc Barba i Masip, 05/1/1864 – Rambla Nova, 41) and house Josep Antoni Martorell (Josep Maria Pujol de Barberà, 19/06/1917, Rambla Nova, 94b).

House Icart shows two interventions. The first one, carried out by Josep María Pujol de Barberà -April 1924-, concentrated on the addition of a gallery at the main floor and a modification of the façade decoration in accordance with the new aesthetic criteria. The second one, designed by José María Monravá -October 1946-, was much more ambitious. Besides refurbishing the building capstone, a new storey was added. The inclusion of the gallery by Pujol meant the use of artificial

stone, which Monravá was to use afterwards for the upper part. No wood was used for covering, giving preference to reinforce concrete. The small vault joints were to be of artificial Portland cement. The technical report specified: "This work will employ the best available materials and will follow the rules and prescriptions of good construction" (AHMT – F – 1950:108). It was not an urgent rehabilitation. Things were beginning to change.

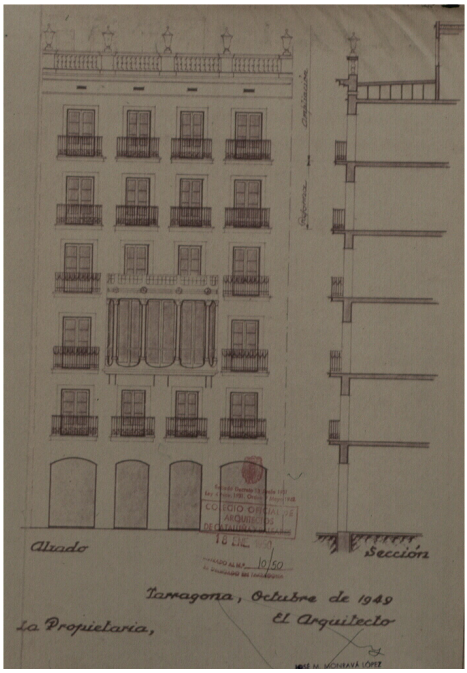


Figure 14. House Francesc Icart, José María Monravá López,, 1 October 1949. Rambla Nova, 41. Front view and section (AHMT)

The amelioration carried out by Antoni Pujol Sevil from his father's project for house Martorell -19/6/1917- is a good example of the importance reached by artificial stone in comparison with the natural one.

> The construction will include brick walls and iron beams, hydraulic pavements and plaster of Paris plastering, existing ceilings in the rooms on the front and rear façade, sitting room and passageways. The decoration of the front to the Rambla will be made of artificial stone tiling and posts, contrasting with the piers of visible fabric (the two middle storeys where a wide central window is foreseen); one gallery at the main floor (with natural stone wall) and stucco coating, contrasting with the artificial stone balconies at the upper floor. The terminus, consisting of architrave, cornice and balaustrade will be also artificial stone.
>
> (AHMT – E – 1932:39)

The intervention aimed at making out as many flats as possible, in order to maximise the profit from the investment. This same approach is to be found in the project for addition of a dwelling at the attic level, as carried out in 1947. The terrace, where the new dwellings were to be erected, had been rehabilitated in 1939.

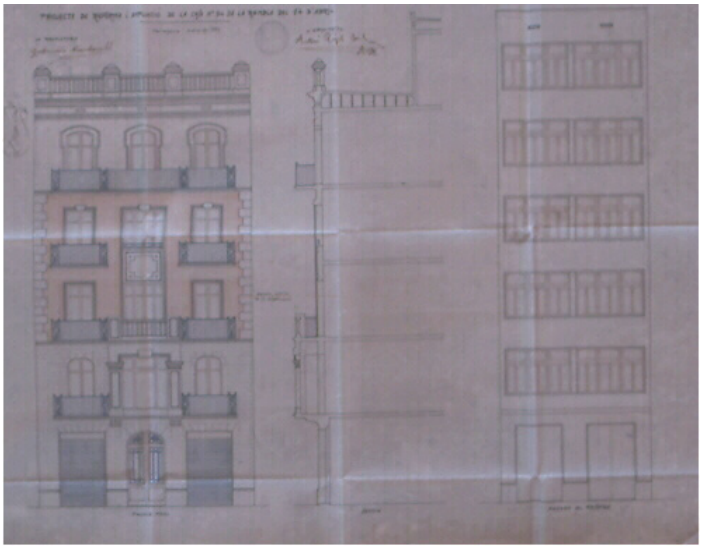

Figure 15. House Josep Antoni Martorell, Antoni Pujol Sevil, 1 March1932.
Rambla Nova, 94b. Front views and section. (AHMT)

In summary, the adoption of a particular technique depends on the time of the proposal, on the economical resources, on the technology stage, on new patents, on the regulations in force…. The houses subsidised by the *Servicio de Regiones Devastadas* couldn't introduce great novelties, but followed the formulas already tested twenty years before. Although it's worth noting how some materials became obsolete -wood or masonry- whilst other materials were gaining acceptance -concrete small joists, fibre cement, Portland concrete-.

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*1959 por el que se transforman los antiguos servicios de la Dirección General de Regiones Devastadas en el "Servicio Nacional de Construcciones". Decreto de 23 de septiembre de 1959 por el que se transfiere la administración y realización de viviendas de la Comisaría de Urbanismo de Madrid Instituto Nacional de la Vivienda*. Madrid : Hijos de Vicente Mas, imp.

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