

# DRUŽBENO ODGOVORNA STANOVANJSKA ZAZIDAVA V ZGODOVINSKEM SREDIŠČU VALENCIJE V ŠPANJI

## SUBSIDISED HOUSING UNITS IN THE HISTORIC CENTRE OF VALENCIA, SPAIN

### Ključne besede

socialna stanovanjska gradnja; zgodovinsko središče; oblikovanje prostora; reinterpretacija; bioklimatske zgradbe

### Key words

social housing; historic centre; urban context integration; reinterpretation; bioclimatism

### Izvleček

Družbeno odgovorna stanovanjska zazidava 23 bivalnih enot v središču Valencije združuje oblikovanje prostora z upoštevanjem konteksta lokacije. Dvajset stanovanj je bilo zasnovanih na novo, tri pa so bila predmet konservatorskih posegov in celostne obnove. Stanovanja so datirana v 16. stoletje, a so bila v 18., 19. in 20. stoletju spreminjana in prezidana. Izvedene predhodna raziskava objekta je omogočila določitev ključnih dejavnikov (smernic) razumevanja mestnega tkiva. Ugotovitve raziskave smo vključili v zasnovo novih enot: uvedba skupnih komunikacijskih prostorov, notranjih naravnih prezračevalnih vertikalnih prostorov, niše v ravnini fasad (učinkovito senčenje). Zasnova temeljča na predhodni raziskavi omogoča prodor sončne svetlobe globoko v notranjost notranjega dvorišča in senčenje bivalnih prostorov. Nastala je bioklimatska stavba, ki ne potrebuje dodatnih prezračevalnih naprav (poletje), saj je gibanje zračnih mas v objektu izvedeno po naravni poti. Objekt zaradi ekonomičnosti izkoriščanja klimatskih pogojev mediteranskega podnebja generira manjše obratovalne stroške. Varčnost pri obratovanju objekta je del družbeno odgovorne stanovanjske politike. Projekt je primer preslikave nekdanjih (16. st.) zakonitosti gradnje v sodobno arhitekturo.

### Abstract

Twenty of these housing units were new constructions and three were part of the restoration of an existing building initially scheduled for demolition which originally dated from the 16th century but had been repeatedly transformed over the 18th, 19th and 20th centuries. The preliminary study carried out for the restoration of this existing building and the project for the twenty adjoining new housing units offered the key points for the reinterpretation of the city's built fabric. This reinterpretation of the constructed grammar of the local buildings was more filters was not an impediment to the introduction of ample common spaces and terraces for the housing, the controlled introduction of solar capture to the heart of the building or the creation of cross-ventilation into the housing to prevent the use of air conditioning in summer and much of the heating in winter in the warm Mediterranean climate of the city of Valencia. In addition, in the restoration of the historic building attempts were made to transform it into merely another phase of its life without eliminating prior phases, and joining the ranks of transformations from the 16th century to our days.

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**Fernando Vegas López-Manzanares**

Universitat Politècnica de Valencia, Spain  
Faculty of Architecture  
fvegas@cpa.upv.es

**Camilla Mileto**

Universitat Politècnica de Valencia, Spain  
Faculty of Architecture  
cami2@cpa.upv.es

This project is part of a wider action on the historic centre of Valencia. Project objectives included the restoration of existing buildings, widening the narrow calle Recaredo, renovating urban installations and paving and creating new public gardens and spaces for this district of the city. AUMSA (Actuaciones Urbanas Municipales S.A.), a municipal company which specialises in projects of this sort, was in charge.

This project aims to heal a wound in the urban landscape caused by the demolition of several historic buildings, in part due to the work of widening calle Recaredo in the traditional neighbourhood of Els Velluters in the historic centre of Valencia. The project focused on three buildings: the design of two buildings for even numbers (building A) and odd numbers (building B) with a shared underground car park in this street, and the restoration of an existing building (building C) which gives out onto calle Maldonado 33 [Murad, Arraiz 2011].

The area of action features several buildings dating back to the 1960s and 1970s and even later, which were designed independently from their historic setting and have created major distortions with respect to the architectural interpretation of the historic centre. Buildings A and B, of new construction and small compared with their respective façade perimeters of 33 and 50 m, stand out and have a major visual impact on their surroundings. The

6 m wide façade of building C onto calle Maldonado, resulting from the late 19th-century realignment of façades on the street, in fact hides a large 16th-century house extended in the 18th century.

Firstly, a detailed preliminary study was carried out on building C, consisting of research in the Municipal Historical Archives, the detailed survey of the existing building and the study of the chrono-typology of the different walls, floors and ceilings, as well as other characteristic features. Additional studies included a Carbon 14 analysis of the main beams, sample tests on original decorative features, stratigraphic analysis of the walls, structural analyses of the constructions, etc. [Mileto, Vegas 2009].

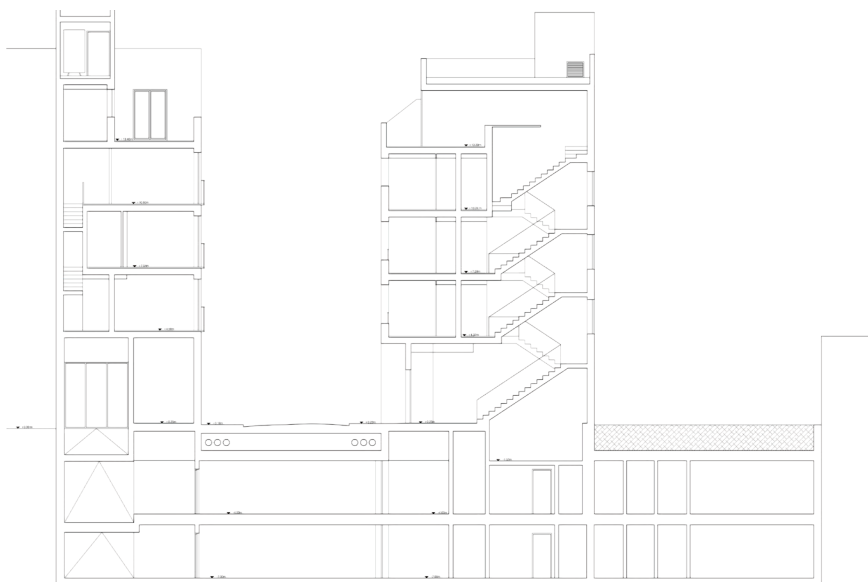
The study of the formation and the constructive evolution of the pre-existing construction to be restored (building C), with an organic growth of extensions and staggered terraces in the back courtyard in the progressive building up of available space frequently found in the historic city centre of Valencia, on a narrow plot which barely allows for the presence of two openings per floor, has mainly conditioned the design of the recent construction in buildings A and B [Mileto, Vegas 2014].

Building A, 10 m deep with a façade to a back courtyard, has housing units with spacious terraces dug out from the building's volume. Building B, 7 m deep with poor orientation

to the west and no back façade, was designed with a sloping interior courtyard creating staggered terraces. This interior landscape of spaces dug out from the main volume lets sun in to the entire building down to the ground floor during most of the year, as well as generating natural ventilation.

This staggered indoor courtyard, not strictly necessary according to regulations, provides continuous cross-ventilation from the external façade, which includes windows stipulated by regulations, to the inside of the building. This is absolutely necessary given the excessive heat due to orientation to the west. It also generates longitudinal cross-ventilation between the different open courtyards in the building, in turn ventilating residential units and stairwells.

The sloping courtyard with staggered terraces was planned following a solar chart designed specifically for building B in order to ensure the best use possible of morning sunlight. Not only does the sun stream through the building and over the successive terraces of the different floors, but it also reaches the ground floor in the morning for most of the year, lighting up people entering the building or waiting for the lift. A wood pergola supporting a sheet of glass acts as a visual filter and provides the privacy needed to separate the ground floor for public use from the staggered upper floors for private use.



Slika 1: Prečni prerez objekta A in B ter ulice Recaredo.

Figure 1: Transversal cross-section of facing buildings A and B through calle Recaredo.



Slika 2: Zgradbe A, B in C. Prvo nadstropje.  
Figure 2: Buildings A, B and C. First floor.



Slika 3: Zgradbe A, B in C. Drugo nadstropje.  
Figure 3: Buildings A, B and C. Second floor.



Slika 4: Zgradbe A, B in C. Tretje nadstropje.  
Figure 4: Buildings A, B and C. Third floor.

The cross-section of building A and especially that of building B resemble a large Gruyère cheese with courtyards, terraces and garden spaces dug out from the building's volume. With the correct orientation these spaces provide exceptional sunlight inside the building and allow strategic cross-ventilation which counters the excessive heat caused by the sun inciding on rooms in the south and west facing façades. Nevertheless, in both buildings A and B, the continuous skin of the façade deliberately built 40 cm thick to accommodate the sliding shutters inside, towers over these terraces, perforating spaces following composition guidelines suited to the historic narrowness of the plots in the neighbourhood to avoid an excessively uniform and homogeneous horizontal interpretation which would alter the scale of the building in the urban landscape. Following local building tradition, the louvered shutters have moveable slats in all their sections and allow a nuanced and suggestive regulation of the strong Mediterranean daylight in the city ([Vegas et al. 2014]). Like an onion skin the façade can be divided into independent strata with tilt and openable windows, sliding louvered shutters whose textural variations depend on slat angle, and the lime mortar render of the outer façade which provide the building envelope with interesting architectural variations.

Most of the housing units were designed as interlocking duplexes with staggered upper and lower floors, which fitted better into the building as a whole while respecting and improving the respective terraces. As regards the buildings of new construction A and B, the carefully thought out crowning on façade A, the sloping courtyard following the south orientation of sunlight, and the incorporation of overlapping duplex housing units, as well as the changing composition of the openings on both façades have dictated a distribution of floor plans which change from one level to another and have prompted a painstaking execution of the project in all its details and electric, gas and heating installations, but above all the supply of drinking water, drainage

and forced ventilation shafts in kitchens and bathrooms. Even though they are different, all the housing units have a characteristic terrace surface of over 20 m<sup>2</sup>, a tradition in the historic centre of Valencia dating back to at least the 16th century.

The filtering paving of the terraces is all at the same level as the indoor flooring of housing units. In fact, the terraces make their presence felt in the housing surprisingly and unexpectedly by continuing the horizontal plane of the interior paving. Waterproofing and drainage are resolved by staggering the floor structure in a way that is not noticeable in lower housing units. In the case of building B, these staggered levels have been used simultaneously to accommodate the hanging beams which cover a single porch 7 m long, given that the construction of a double structure porch would have dotted the distribution of the housing units with useless intermediate pillars.

The crowning of new construction buildings A and B was resolved with a kind of inverted cornice consisting of a U-shaped stone channel at the top of the wall, creating its own clearly visible shade and acting as a continuous gutter which avoids rain splashing or running down from the top of the façade. The shade created by this inverted cornice is not a literal reproduction of the construction tradition of this historic building, but its abstract quality is perfectly in keeping thanks to the shadow echoing the upper crowning of the building.

However, restored building C, originally due for demolition, was studied and its lineal structure dating back to 1580, its 18th-century annex buildings characterised by sgraffito relief unseen to date, its carpentry from 1864 and its paving and façade from 1901 detached from the original were all restored. The building owners were granted permission to gain surface by extending the original façade to the street for realignment purposes. In fact, the building housed an interesting collection of historic floors and roofs, the earliest of which dated back to 1580, with subsequent additions from circa 1750, 1864 and 1914. The floors and ceilings from 1750 featured decoration

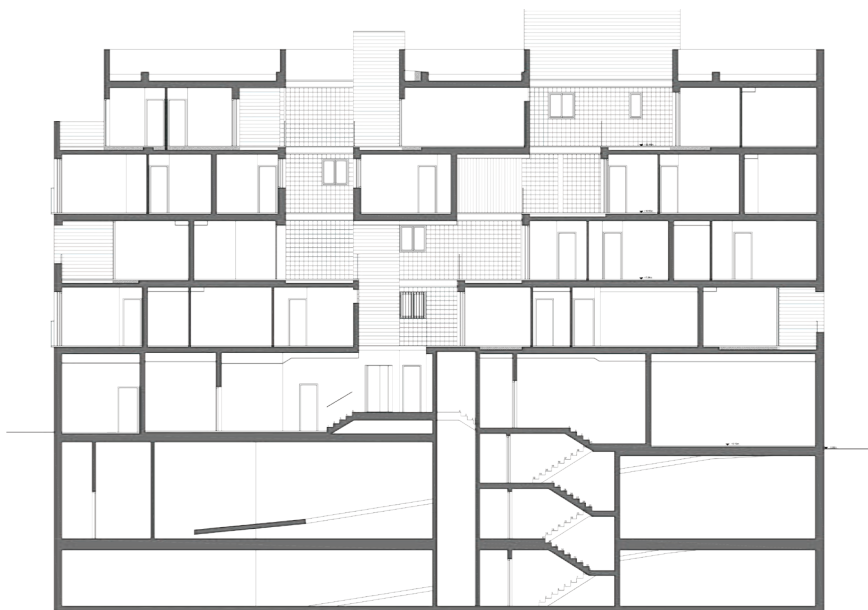
Slika 5: Pogled na fasadni ovoj, razvidna je raznolikost osno pozicioniranih odprtin.

Figure 5: Elevations of all the compositions studied to provide varied and heterogeneous vertical readings of the narrow plots in the historic centre.



Slika 6: Vzdolžni prerez objekta B.

Figure 6: Longitudinal cross-section of building B.



characteristic of the period which helped fix the dating and which have been restored, despite their poor condition. The 1750 terraced roof summarily became a floor when the back of the building was built up in 1914 [Mileto, Vegas 2015].

Unintentionally, the historic building to be restored became a sort of museum for the evolution of housing in the historic centre of Valencia, with multiple interesting phases of construction, building up and transformation. The project for the restoration of these three residential buildings has attempted to adapt to their past history, without destroying any of their construction phases. In keeping with the philosophy of organic growth observed throughout the history of the building, the aim was for this intervention to become yet another life phase for future generations to study and recognise [Doglioni 2008]. The generosity of the resulting spaces and the warmth of the recovered historic construction have resulted in three magnificent examples of subsidised residential housing dating back to the 16th century, a rare situation which ought to be far more common.

The entire project resulted in 23 subsidised housing units in the form of 90 m<sup>2</sup> residential units with the maximum usable surface contemplated in current Spanish regulations. 20 of these housing units were new constructions (buildings A and B) while the other 3 were restored (building C). In addition, the two-storey underground car park below buildings A and B, the courtyard of building B and the street between them provides 42 parking and storage spaces. 23 of these belong to the subsidised housing units while the rest benefit the neighbourhood, which is very short of parking. This two-storey underground car park below local water ground level, which is shallow in this coastal city, was a feat of engineering. This work also had to take care of the construction of floors below street level, calculating 3,000 kg/m<sup>2</sup> of static load, and studying dynamic loads to allow road traffic. The total cost of the underground engineering work was high for this reason, but the work on restoration and new construction was much lower at a

cost of approximately 1,000 €/m<sup>2</sup>.

The ground-floor commercial premises have been rented out to local associations among others. The housing units, which are municipal property and are currently being leased to low-income tenants, are proving their efficiency as regards sunlight and cross-ventilation. This makes it possible to avoid the use of air conditioning and heating during most of the year, as well as showing off the extensive outdoor surfaces in the form of continuous terraces and permeable paving, and the capacity of the architecture (particularly in building B), to provoke and generate social relationships for neighbourhood collaboration.

Slika 7: Notranje terase v zgradbi B – notranje dvorišče stanovanjske enote (Photo: Tato Herrero).

Figure 7: View of the interior sloping courtyard in building B, staggered into terraces. (Photo: Tato Herrero).



Slika 8: Pogled na restavrirano stanovanjsko enoto v tretjem nadstropju v zgradbi C. Figure 8: Third floor of building C, after restoration.



## Credits

PROJECT: 23 subsidised housing units, Valencia.

FUNCTION: Housing.

AUTHOR: Camilla Mileto and Fernando Vegas.

LOCATION: C/Recaredo between C/Roger de Flor and C/Maldonado, Valencia.

DATE (PROJECT AND EXECUTION):  
Basic project: 2005.  
Final project design: 2007.  
Execution: 2008-2010.

PHOTO CREDITS: Fernando Vegas and Camilla Mileto.

CLIENT: AUMSA (Actuaciones Urbanas Municipales S.A.)

BUDGET: 3.605.211 € (PEM)

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