

Plot structure and housing form: Pierre Le Muet vs Athanasio Genaro

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Abstract. *The present paper deals with the relationship between the historically built-up housing constructions and the models proposed in the “technical” books on residential architecture that circulate in Europe and Spain from the late XVII century on, inscribed in a longer term research aimed at re-constructing the bloodline linking pre-industrial residential buildings with those that ended up by being its subsequent tributaries towards the end of XIX century. The private residential building constitutes the fundamental supporting element of the city’s urban different fabrics. In the case of the city of Valencia, a great part of these fabric is composed by neighbourhoods made out of multi-family buildings or ‘casas de pisos’, frequently added serially and usually forming enclosed perimeter-blocks, who are the result of the progressive codification of building prototypes that appear within the historic city throughout the nineteenth century, through the transformation of existing buildings of pre-industrial origin, usually single-family artisan houses. The artisan house is, thus, the hypothetical starting basis of that transformation based on exploiting the undifferentiated spatial structure of the pre-industrial dwelling, expanding its built-up mass and subdividing its interior, so that it could be rented to different families. This process of typological evolution promote the new identity of the residence as a formal and functional response to the new times, which may also make it possible to outline the local affiliation of the “house”, a result of the particular development of each cultural environment. This article focuses on the historical time of typological transition using as a source the re-composition of the pre-industrial plot and the systematic study of the residential types contained in the contemporary architecture “handbooks”.*

Keywords: Building type, urban morphology, Valencia, house floor-plan design, plot form.

Plot structure as framework for studying the residential building form in historic cities

The study of the pre-industrial residence through the plot

We have focused our interest in the forms of housing during the process of their transformation, but the historical documentation available on this subject is almost non-existent in Valencia, as occurs in many other cities. There are no plans or documents that refer to

the plan, the facade elevation or the domestic brief. We do not know how large or small was a civil servant dwelling, or what kind of housing did comply with a lawyer requirements. At this level of research, the relationship between building form and social function is difficult to establish. And besides, function changing faster than form, what had served as a workshop for a tinsmith may easily become that of a bakery; what had served as the residence of a nobleman may become the seat of an institution without requiring fundamental architectural changes.

Therefore, no function or project brief seems to be able to inform the built-up plot. Conversely, it is more the permanence of the container - plot and building - in relation to the content of the inhabitants - what makes it possible to address plot typology on formal criteria, referred to three characteristic plot parameters: its surface, its geometry (the shape of the contour delimited by its boundaries), and its relation with the surrounding spaces, street-space in particular. To determine plot typology, it is essentially to analyse the variation of these three elements and the relative influence of each of them on the architectural form, i.e., the organisation of the built masses supported by the plot.

Given equal plot-surface, architectural forms vary accordingly to the variation in the plot shape and, conversely, identical architectural forms may be found on plots of the same shape but with very different surfaces. We can therefore conclude that the shape of the plot is more decisive than its surface, since the class of plot-forms and that of the architectural forms can be divided simultaneously into subclasses, whereas it is not possible to organize in the same way architectural forms and surfaces. Definitely, plot form is the essential element of the typology of the urban fabric units. (BOUDON, 1975).

Surface is, however, also relevant as regards typology, acting as a form discriminator. Within an urban fabric of the same historical nature, a surface threshold may be established, below and above which the relations between plot form and architectural form differ. In the lower side, that of the small plot, the parcel shape determines imperatively the architectural form. In the upper limit, the relations between the parcel form and the architectural form become much more undetermined.

On very small plots, the organization of the built-up masses of the house is uniform, because, as the ground surface is limited, the formal constraint is very strong. Conversely, on very large plots, the surface is such that, whatever the project-brief, architectural forms are free from plot constraint; The plan design is organized according to the preferred architectural style or the wishes of the architect. In plot typology, as soon as the constraints

of the plot form on the architectural form weakens, one enters another surface field, into another plot category.

Plot structure in Valencia, late XVIII- early XIX centuries

Pre-industrial residence through the plot structure: Valencia

The plot structure is, then, the most suitable field of study to make verifiable hypotheses about the pre-industrial residential fabric. But the intensive urban transformation processes of the last two centuries have virtually eliminated all residential buildings of medieval and pre-industrial origin. The few examples of surviving buildings are so transformed that they are unrecognizable, or they are grander houses, insufficiently representative for the purpose of evaluating the fabric as a whole. On the other hand, the greater stability of the parcel structure allows us to trace with certain precision the processes of change operated in urban fabric.

Following this line of research, we have reconstructed the plot structure of the city in 1865, in the period immediately before the demolition of the enclosure wall, key date in which the enclosed city has reached its densification limit. This reconstruction uses as a source the valuable work of restoration of the entire historical centre, elaborated under the guidance of Professor J.L. Piñón (PIÑÓN 1988) with re-adjusting and translating the information to the contemporary cadastral cartography (Figure 1).

In the 1865 city cadastral map we can read and interpret Valencia city as an organism articulated around a primary structure dominated by four spaces: Plaza del Mercado (Market Square), Plaza de la Virgen, Plaza de Santo Domingo and Plaza de San Francisco. All the buildings representing the authorities of tiered estates are located around those squares: the Bayle (old municipal authority), the regular clergy, the secular clergy, the local nobility, the civilian power and the military power. On the other hand, none of these squares is a formally planned space. They are the result of

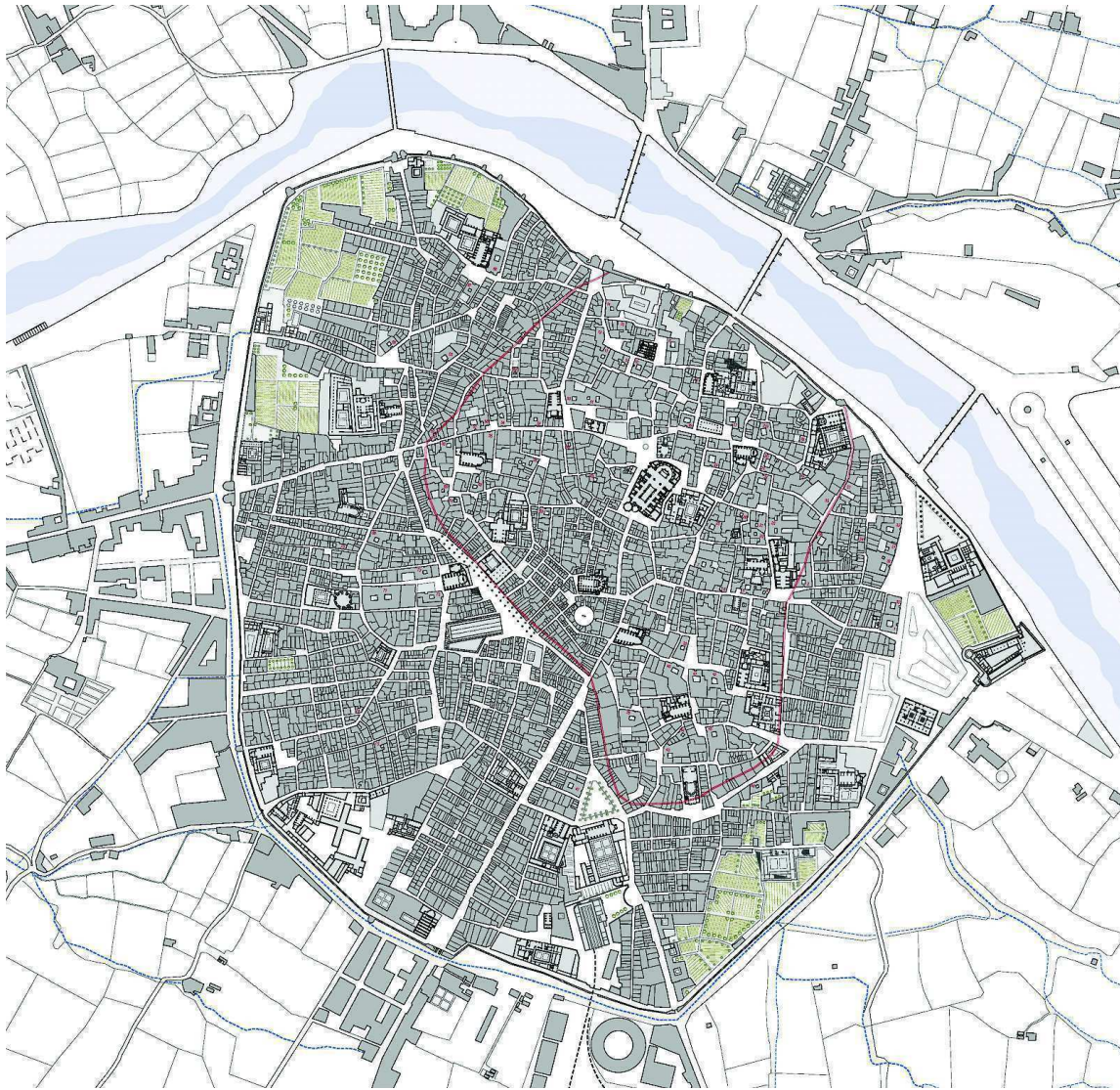


Figure 1.

Valencia city map in 1865, previous to the demolishing of the enclosure wall. From Ph.D. thesis “Residential fabric and urban structure” by Gonzalo Vte.-Almazán. Unpublished.

different interventions, multiple agents and at different times. The primary urban structure is completed with the street network connecting these squares with the city enclosure gates. This structure has been shared and successively developed by the Roman, Arab and Christian city layout.

At a second level, another structure can be read, dependent but complementary to the first, formed by the residential fabric. This fabric comes, on the one hand, from different adaptations of inherited residential structures and, on the other hand, from extending and occupying the vacant spaces within the perimeter of the outer Christian wall. In this

second residential structure we can find, within the ancient Arab enclosure, ten residential groups that have the parishes as central ‘local’ kernels, and a hierarchised street layout as structuring axes. Within the vacant grounds that were progressively occupied, the fabric was formed around a hierarchical street layout system conditioned by the existing structures (roads, properties, irrigation ditches and topography) (Figure 2). On these streets, a series of building bands were gradually being arranged, made out of the dominant building types in each historical phase. The resulting morphology is a number of urban block groupings, each of them endowed with



Figure 2.
Extracting the structural elements and the residential fabric. Ibid.

a specific regularity. We distinguish six regular autonomous groupings, whose genea and formation process can be explained.

The 1865 plot structure plan allows us to elaborate a reasoned classification of types according to their geometric parameter and their location.

Examining the city map shows a substantial difference between the fabrics bounded by the old Arab enclosure wall and the area between that wall and the Christian wall. The first presents a more contorted street network, typical of the evolution of a developed Islamic settlement. In the urban fabric between both enclosure walls, plots seem to be arranged in a more regular structure, although still there are different nuances in terms of form. However, both fabrics share the same structural elements, forming a homogeneous whole. We will focus on this second group, in which we detected the existence of a module derived from the use of similar buildings according to their historicity. This base module is the plot. Apart from some exceptions, the module-plot tends to have a rectangular shape, perpendicular to the street line and with its shorter side as a street-facade or frontage. Each frontage corresponds to a built mass with a variable depth depending on the building type occupying the plot, mass that evolves in time synchronously. The block is the ultimate result of this aggregation system as an arrangement of built-up bands.

Plot structure and socio-spatial hierarchy of the city

In order to properly relate residential types and urban morphology, it is necessary to extend the study of housing to all social classes, which will allow us to recompose the integrity of the urban fabric. Architect and military engineer José Hermosilla Sandoval (1715-1776), Director of Architecture in the Royal Academy of San Fernando, described in his “*Tratado de Arquitectura Civil*” (HERMOSILLA 1750) that the form of residence in the 18th century could be divided into three classes: the residence of the higher nobility, based on the central courtyard (or cloister) type; the residence of the labour class, based on the artisan’s house; and finally, he described an intermediate class, which we may refer as the emerging, well-to-do bourgeois class, whose residential type is based on town-houses that “will imitate the nobility house, only adjusting it to its economic possibilities”.

To elaborate a hypothesis of how each of these social classes was quantitatively distributed in Valencia city in the late eighteenth century, we resort to the interpretation made by historian Manuel Ardit (ARDIT 2009) based on the 1787 census under Floridablanca. Using its parameter we have elaborated data table n°1.

Data shown represent a society still dominated by a minority elite, with a majority presence of artisans and craftsmen not yet

SOCIAL-ECONOMIC PROFILE		
in Valencia city according to Chief Minister Conde de Floridablanca census (1787)		
	total inhabitants	
artisans and labourers	45.360	63%
tradesmen, professionals and functionaries	7.200	10%
servants	14.400	20%
nobility, clergy, military and asimilated	5.040	7%
	72.000	100%

DataTable 1.
Social-economic profile in Valencia city at late XVIII century

CORRESPONDENCE BETWEEN RESIDENTIAL TYPES AND SOCIAL STRATA		total	mean average		
as deduced from Valencia plot structure		plot total surface	number of plots	plot surface	
social class profile	dwelling type	m2	nº	m2	%
artisans and labourers	artisan house	362.946	3.328	109	65%
well-off middle classes	middle-class house	303.158	1.757	173	34%
nobility	urban grander house	67.194	73	920	1%
		733.298	5.158	142	100%

DataTable 2.
Correspondence between residential types and social strata

“proletarianised”, and in which emerges an incipient bourgeoisie. The high percentage of servants is surprising, and we can only guess to what extent their residence was linked to that of the masters they served.

Plot structure can provide us with data of interest in quantifying the three types of housing present in the city. The building substitution process is very intense in the decades prior to 1865. Nevertheless we can form a hypothesis based on one of the three fundamental plot characteristics mentioned above: the size of the plot.

We make a data table with the mean average plot area by dividing the sum of their surfaces by their number and classifying it by zones, crossing the two eighteenth-nineteenth century administrative demarcations, the Barrio (Neighbourhood) and the Parroquia (Parish). With this operation, we subdivide the city into 31 groupings with a high degree of plot homogeneity in which the data allow us to draw different conclusions.

The mean average surface of the urban residential plots is 131 m². Studying all

the different sizes we have made three discriminating thresholds: The first, comprising the smallest - below 115 m² - belongs to the commercial and artisan districts that surround the Market and the Lonja. It corresponds to the natural space of the house-cum-workshop or commercial shop. The second one, up to 135 m², takes up the whole area of Christian extension to the west side of the Arab older city. They are the later artisan-commercial settlements. Up to 160 m², a third group containing the parish of St Bartolomew intramuros and Christian extension outside the Arab wall of the east. From here the nobler, wealthier city neighbourhoods, reaching 200 m², in the Parishes of St. Nicholas and St. Thomas intramuros. Finally, over 200 square metres, we count the most traditional bourgeois and nobility settlements, the Parishes of El Salvador, San Esteban and San Lorenzo. If we draw in the city map a hypothetical line separating the first three from the latter two, we will obtain an invisible physical frontier that divides socio-economically the city. (Figure 3).

On the other hand, if we relate the size of

the plots with the socioeconomic profile, we can elaborate data table n°2. The data table shows, broadly, the correspondence between residential types and social class-profile or, to be more exact, the correspondence between the plot structure and the social stratification in the city at the beginning of the nineteenth century.

An attempt at delimiting a statistical profile of the plot shape

We worked out the previous topographical hierarchy using one of the three parameter characteristic of the plot: its surface. However, as we have explained, we believe that the plot shape is the essential factor in ordering and understanding the architectural forms built-up on them. It is necessary, therefore, to tackle the task of outlining the parcel geometry. We proceed as follows:

a) First we analyze small plots, those with less irregularity in form, since their small size does not admit significant variations in the disposition of the built masses, forced by the need to adapt to their use and, therefore, to be economically viable.

b) We then select as a field of study one of the homogeneous groups in which we have subdivided the city by taking on account surface size, using as a differentiating threshold the average area of 109 m², corresponding to the largest -and lowest- social class-profile.

c) We draw a “typical plot” that derives from statistical analysis, assimilating its dominant form and calculating its frontage and depth dimensions as mean average value of the constituent plots of a typical urban block.

We chose a group of urban blocks from the Cuartel del Mar and the San Esteban Parish, organized around the axis of Bonaire Street, as natural route that, parallel to the Arab wall, united the Temple portillo (gateway) with the rambla de Predicadores. It is a group of 15 blocks with varying dimensions but corresponding to the same pattern: they are rectangular and are formed by the arrangement of two parallel plot bands, sited back to back.

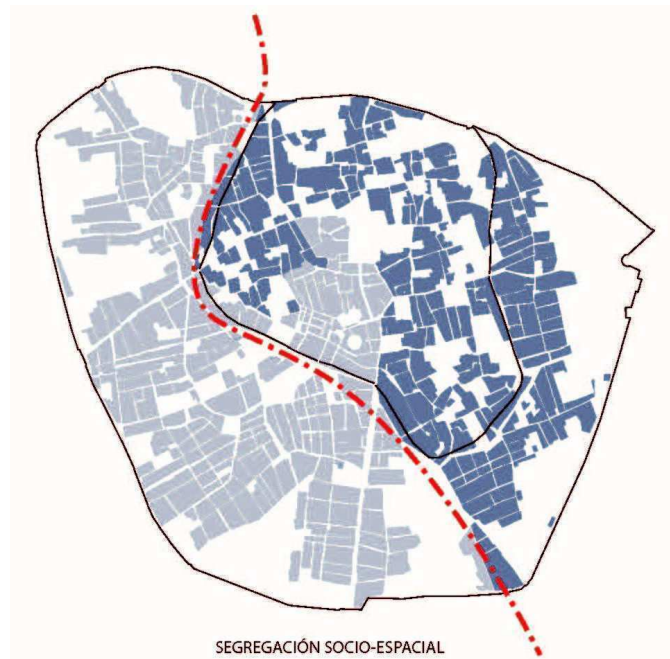


Figure 3.
Social-spatial segregation in Valencia city at late XVIII century

The longitudinal axis of the block is, thus, posted perpendicularly to the most important hierarchical street axis while, in turn, plots are arranged perpendicularly to that axis. This maximizes the number of plots having a street facade. The width of the block, therefore, will be double the depth of the plot type. This aggregation logic is only altered on the short sides of blocks that, as we saw, are in direct contact with the main the hierarchical street axis. In this case plots face the main street by turning 90°, and are arranged with its longitudinal axis parallel to that of the block. This positioning allows us to read the hierarchy of the chosen block group. (Figure 4)

If we calculate and draw the mean average block, we obtain an block unit of 60x32 metres and 1,920 m² of surface. If we operate the same as for the constituent plots, we obtain a plot unit of 6 metres of street frontage and 17 metres in depth, with 102 m² of surface. If we take into account the social classification we have made, we can consider that this plot type is the support of the typical building of the artisan's (or menestral) dwelling. On the one hand, its parameter put it above the samples found in the Market neighbourhood, much more fragmented and dense, with plots falling

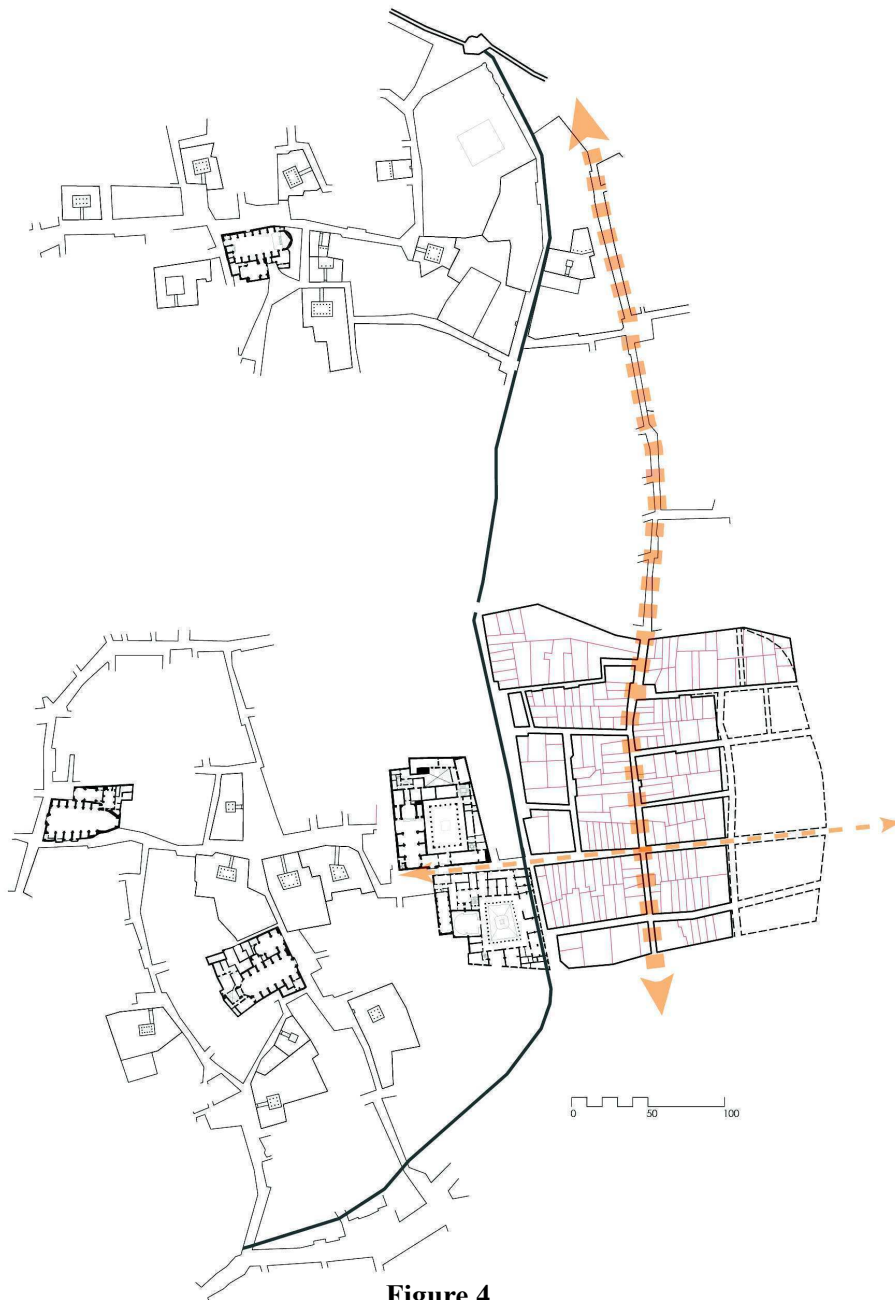


Figure 4.
Map of the homogeneous grouping around the axis of Bonaire Street

below 50 m² in surface. On the other hand, it comes below the 160 m² threshold, which we have attributed to the appearance of the first samples of well-to-do houses.

To accomplish the same operation with plots larger than 150 m² has not been deemed viable. Their geometrical disparity prevents us from finding a pattern that allows us to draw a typical shape. Their greater size also allows for a greater freedom as regards the design of the architectural form of the supported building.

Architecture “technical handbooks” in XVII and XVIII centuries in Europe

The urban dwelling form in the technical architecture “handbooks”

It has been observed that the role of architecture as a ‘cultured’ discipline and a professional trade did address a limited amount of the urban architecture and building construction along the period in which the typological transition

we are interested in was being outlined. In this context, the professional building design competence was mainly borne by the masters-masons, the epigones of the medieval *magister operis*, the participation of architects remaining irregular and minor, mostly referred to relevant buildings (RODRIGUEZ CEBALLOS 1987), (BERCHEZ, J. 1987)

A distinctive feature in the professional culture of private architecture in France and Spain from XVII up to the second half of the XIX century is the existence and diffusion of architecture “Manuales”, i.e., books in which general rules on the art of building are combined with the systematization of examples of residential buildings, containing plans and, frequently, elevations and sections, as well as technical advice and recommendations on other elements forming part of the building construction process.

European architectural treatises since the Renaissance written by Serlio, Alberti, Vignola and others were based on translations and reinterpretations of the Vitruvius’s “De Architectura”, and wilfully intended to collect, interpret and spread the great classical architecture themes. On the other hand, the architecture “handbooks” of the type described, i.e., those that exclusively, or complementarily to the classical themes, do collect and systematize the actual experience of private urban building construction, from grand to modest houses, are relatively unusual. For the purposes of this paper we are primarily interested in two: “Maniere de bastir pour toutes sortes de personnes”, by Pierre le Muet (1623) and “Escuela de Arquitectura Civil en que se contienen los órdenes de arquitectura, la distribución de los planos de templos y casas, y el conocimiento de materiales” by Agustin Bruno Zaragoza and Ebri (1728), published under the pseudonymous anagram “Athanasio Genaro Brizguz y Bru”. For reasons of proximity in time and other aspects of interest, we have also consulted “L’Architecture moderne ou l’art de bien bâtir pour toutes sortes de personnes” by Charles Étienne Briseux (1728)

“Maniere de bastir...” by Pierre le Muet is a straightforward technical handbook addressing the construction of residential buildings. From the beginning the aim is to make accessible

to the private minor dwelling the virtues of decorum and convenience attributed to public buildings. In his introductory text, addressed to the reader, Le Muet states that he simply aims at (...) faire voir au public un moyen de bastir sur toutes grandeurs proposées, afin qu’aux maisons des particuliers on puisse observer la bienséance & commodité, proportionnement à celle qu’on garde aux batiments publics. J’ay donc commencé depuis la plus petite estendue sur laquelle on puisse bastir iusques à une grandeur telle qu’il se trouve plusieurs personnes posséder des places de semblable mesure (...)

The handbook contains 53 beautifully drawn plates with graphic scale in toise (six feet), 46 of them containing designs for a number of houses of which about half correspond to the lower stages of urban plot, with a rather complete design including ground floor plan, typical floor plan and facade elevation. The building ‘models’ proposed are varied and systemised according to step by step approach as regards plot measurements.

For his part, Athanasio Genaro was a “tracing friar” i.e., an educated clergyman with studies in architecture and mathematics. His book is more of a hybrid between a treatise and the practical handbook. It begins with a survey of the important elements of classical architecture, focusing particularly on constructing the classic architectural orders, drawn from Vitruvius, Palladio, Scamozzi, etc. as well as more local talent -- Juan de Herrera, Caramuel Lobkowitz, Thomas Vicente Tosca, a near-contemporary--, and dedicates one third of its extension to the practical treatment of contemporary designs for private urban dwellings. Thirteen of the work’s fifty four plates are dedicated to plans and elevations of multi-storey city townhouses (casas medianeras), ranging from quite humble six-room apartments to grand dwellings complete with fine courtyards and stables. These illustrations are accompanied by precise measurements, which suggest that Agustin B. Zaragoza had given thought to how new construction could be adapted to differing tiers of clients.

Le Muet vs. Athanasio Genaro: a comparison of specific cases in Valencia

Plot-type and dwelling-type: an approach through the architectural manuals

The natural continuation of this research line is to relate the conclusions drawn from the study of the land structure to the building types that support it. Since verifiable samples of such types have not survived, it is of interest to refer to the architectural manuals of the last few centuries that address the subject of residence and to cross-refer the data of the theoretical elaborations with those of our field research. In this sense it is pertinent to use the mentioned manuals of Athanasio Genaro and Le Muet in order to compare them with each other and with our data to draw conclusions.

The comparison will be made by re-drawing the plans contained in both manuals and unifying them into the metric scale. Le Muet uses the toise (T) as linear measure, unit while Genaro employs the Castilian foot. Both intend to elaborate a group of prototypes with the character of operational handbook, capable to be used to address the building up most usual urban plots in any real location. They must cover both the needs of the whole of the social spectrum and the geometric variables derived from plot location and form. For this

reason the different types are considered as a repertoire of valid solutions for different dimensional series, in which the determining value is the frontage, the length of the façade segment. Incidentally, the dimensions used in the plates of both manuals are taken without considering the widths of party walls, nor front and back façades, which complicates the data homogenization. We have decided to take as representative for each type the one drawn by the authors, understanding their own choice as optimal.

The result of the comparison is reflected in data table nº3. Will shall distinguish three plot groups regarding the building type:

The first group is the artisan's house, corresponding to the first four types listed in Le Muet and the first two of Athanasio Genaro, with similar dimensions to the those found in the socio-economic zones of the Valencian fabric. In fact the particularization that we have made in the Bonaire street axis, keeps within the dimensional abacus of both "handbooks". This fabric grouping around Bonaire axis is formed by rectangular plots, with a frontage measuring less than 7 metres and depths up to 17 metres. Frontage/depth ratio varies between 1/2 and 1/3, and its surface between 40 and 120 m².

A second group, which we assimilate to the well-to-do house, includes plots measuring

CORRESPONDENCE BETWEEN ARCHITECTURE "HANDBOOKS"								
PIERRE LE MUËT				ATHANASIO GENARO				
	plot frontage (metres)	plot depth (metres)	plot surface (m ²)		plot frontage (metres)	plot depth (metres)	plot surface (m ²)	
PLOT 1	4,9	7,9	38,7					
PLOT 2	5,0	9,3	46,5					artisan house
PLOT 3	6	12,8	76,8	PLATE 42	5,7	12,2	69,5	
PLOT 4	7,0	17,2	120,4	PLATE 43	7,2	17,2	123,8	
PLOT 5	7,4	21,2	156,9	PLATE 44	7,4	21,2	156,9	
PLOT 6	10,9	20,0	218,0	PLATE 45	10,9	20,4	222,4	
PLOT 7	13,7	33,6	460,3	PLATE 46	13,8	25,6	353,3	
PLOT 8	17,8	20,4	363,1	PLATE 47	17,7	20,4	361,1	hôt-urbangarden house
PLOT 9	20,0	40,3	806,0	PLATE 49	20,2	32,9	664,6	
PLOT 10	25,0	25,6	640,0	PLATE 51	24,5	25,5	624,8	
PLOT 11	24,5	41,4	1014,3	PLATE 52	62	46,5	2883,0	

DataTable 3.
Correspondence between architecture "handbooks" of Le Muet y A. Genaro

between 120 and 230 m² in surface. A direct correspondence between the types in both handbooks, with rectangular plots with frontages between 7 and 14 metres and plot depth between 20 to 30 metres. Again frontage/depth ratio varies between 1/2 and 1/3.

Interpreting local dwelling identity in Athanasio Genaro designs vs. Pierre le Muet

Le Muet completes his list with plates containing seven more designs, comparable to the five examples included in Genaro "handbook", all offering a varied repertoire of forms for the urban palace or grander house project, in which architecture finds its autonomous expression means.

Comparing both handbooks, a first glance makes evident the formal similarity between both: The French handbook is taken, one hundred years later, as a direct reference-model by Athanasio Genaro. In fact Genaro's plates can be considered direct copies both in plan and facade elevation, incidentally representing formal and constructional solutions rather alien to Spanish -and Valencian- own cultural traditions.

However, the obvious similarities or equivalences between both should not prevent us from focusing at what, in our opinion, is most interesting: the differences. In Genaro's handbook we find only two plates in which the distribution design is distinctly different from that of the French model. These are Plates 42 and 49, which correspond to Plots 1, 2 and 3 and 9, respectively, of the manual of Le Muet.

Plots 1, 2 and 3 (Figure 5) represent the minimal plot-unit and, organised in a single built-up volume with one or two constructional bays parallel to the facade, and a backyard at the bottom. In the five designs the staircase is always placed at the bottom of the plot except in the third distribution of the third plot.

In Genaro's case, the design for plots of this size is contained in plate 42, but, while the built-up volume is identical to Le Muet, the staircase is sited at the facade. Athanasio Genaro is reproducing in this plate the Valencian tradition of "l'escaleta", described literarily by local chroniclers like Orellana

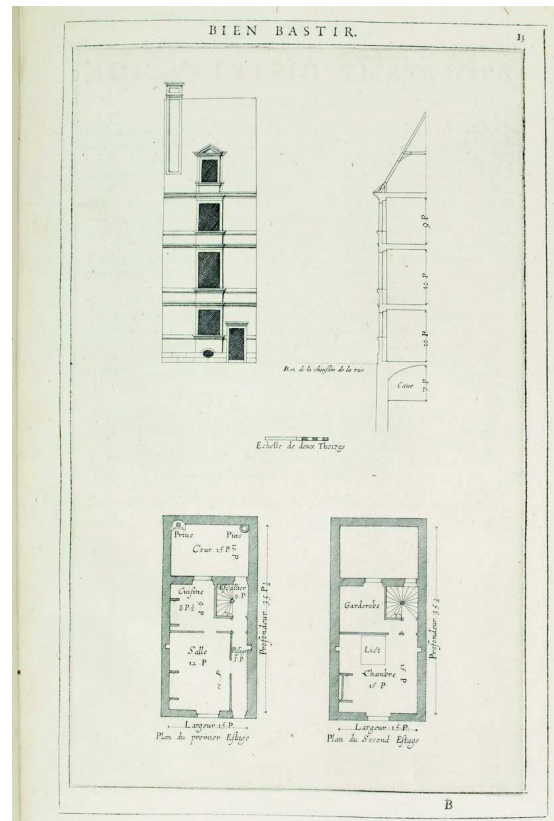
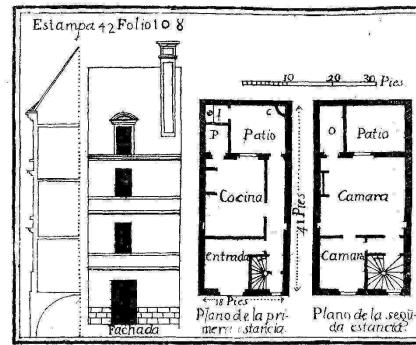


Figure 5.
Lámina 42 – Parcela 3

(ORELLANA 1923), and profusely present in the pre-industrial architecture of the city.

Plate 49 (Figure 6) represents a model of urban grander residence in which the plan is organized around a central courtyard, surrounded by four building bodies of different magnitude. In Le Muet plates, the design of a grander house in a rather extensive plot is always organised around a courtyard, this being not central but sited laterally, so that the building masses are organised either as an "L" shaped plan, or as "U" shaped plan, with two parallel building bands with a staircase

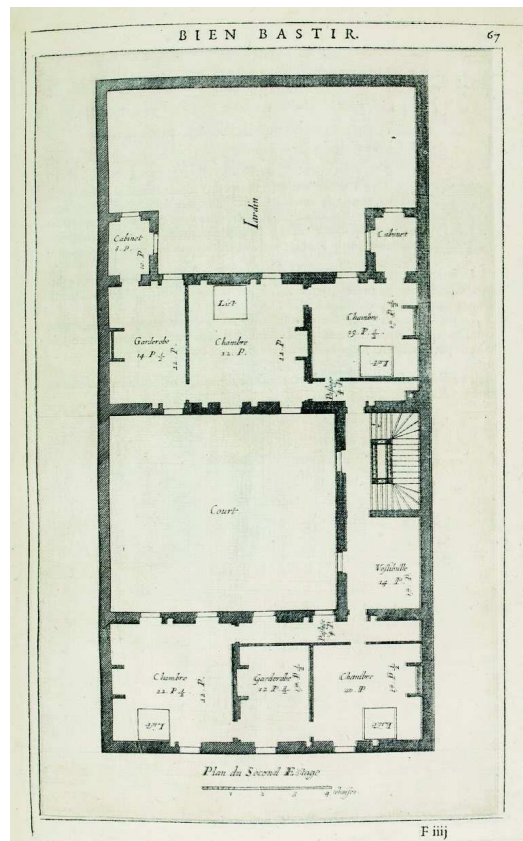
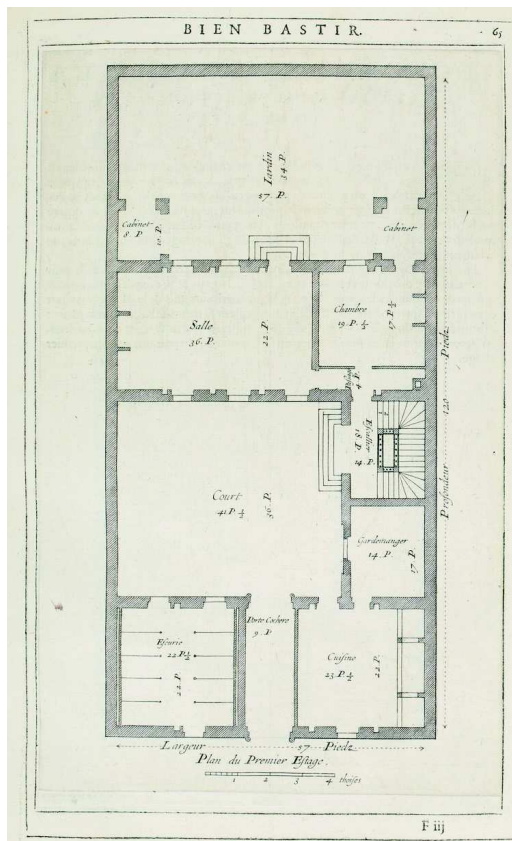
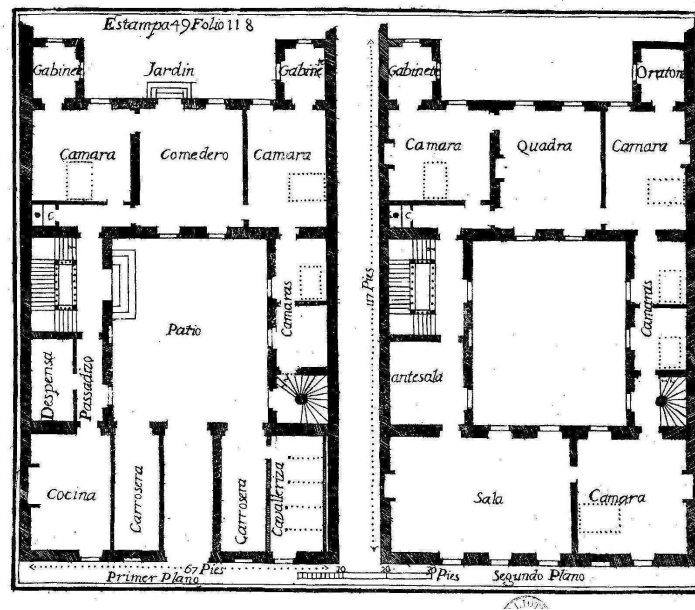


Figure 6.
Lámina 49 – Parcela 9

between them. Both French plan layouts correspond to more rational distributions, which do not appear to come from direct historical references. In contrast, we believe that Genaro central-courtyard layout is an interpretation of the Valencian Gothic palace,

a model repeatedly used in Valencia city well into the nineteenth century.

We can conclude that Athanasio Genaro uses and copies the models in Le Muet handbook as an abacus for distribution layout solutions, but that he chooses the models that he knows

firsthand as different and alternative to those provided by French rationalizing logic.

According to our hypothesis, plates 42 and 49 thus become a valid abstraction capable of illustrating the architectural forms physically building the Valencian preindustrial plot-system.

References

- ALONSO DE ARMIÑO, L. y PIÑÓN, J.L. (1986). La formación de la Valencia moderna. *Sutoria Urbana*, (37), 89-114.
- ARDIT LUCAS, M. Población de la ciudad de Valencia: Siglos XVI-XVIII. En: *La ciudad de Valencia: historia, geografía y arte de la ciudad de Valencia / coord. por Jorge Hermsilla Pla*, Vol. 1, 2009 (Historia), ISBN 978-84-370-7665-2, 269-273 pp.
- AZAGRA, J. (1993). *Propiedad inmueble y crecimiento urbano. Valencia 1800-1931*. Madrid: Síntesis.
- BOUDON F, BLÉCON J. Tissu urbain et architecture. L'analyse parcellaire comme base de l'histoire architecturale. In: *Annales. Économies, Sociétés, Civilisations*. 30^e année, N. 4, 1975. pp. 773-818; http://www.persee.fr/doc/ahess_0395-2649_1975_num_30_4_293645
- BRIGUZ Y BRU, G. (1837). *Escuela de Arquitectura Civil*. Valencia: Joseph de Orga.
<http://bdh-rd.bne.es/viewer.vm?id=0000038341&page=1>
- HERMOSILLA, J. (1750). *La arquitectura civil* (manuscrito).
- DALY, M.C. (1864). *L'architecture privée au XIX^eème siècle, sous Napoléon III*
- MUETLE, PIERRE, (1681), "Maniere de bastir pour toutes sortes de personnes", <Http://gallica.bnf.fr/ark:/12148/bpt6k856412/f4.image>
- MOLEY, C. (1999). *Regard sur l'immeuble privé. Architecture d'un habitat 1880-1970*. Paris: Le Moniteur.
- ORELLANA, M. A. (1923-1924). *Valencia Antigua y Moderna* (3 Vols.). Valencia: Acción bibliográfica Valenciana
- PIÑÓN, J.L. (1988). *Los orígenes de la Valencia moderna*, edicions Alfons el Magananim, Valencia 1988
- PONS, A. y SERNA, J. (1992). *La ciudad extensa*. Valencia: Diputació de València.
- RODRIGUEZ DE CEBALLOS, A (2000). pp 639, "Manual del arte español", pp 619 ss, Ed Sílex Madrid. Also BERCHEZ, J. (1987) "Arquitectura y academicismo en el siglo XVIII valenciano", Edicions Alfons el Magananim Valencia,
- SANCHO, A. (1855). *Mejoras materiales de Valencia*. Valencia: Imprenta de José Mateu
- VICENTE-ALMAZÁN PÉREZ DE PETINTO, GONZALO (2016) "Tejido Residencial y Estructura Urbana. Valencia 1821-1944", Inédita, <http://hdl.handle.net/10251/64078>