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Título **Structural organization and functional distribution of romos in Madrid Architecture of 17 and 18 Centuries.**
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Structural organization and functional distribution of rooms in Madrid architecture of 17th and 18th centuries:

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Several domestic architecture built in Madrid in the 17th to 19th centuries still survey in the historical centre of Madrid, in general with a very poor conservation. In the last decades many of them have been demolished and not always due to a danger of collapse. Nowadays awareness of the cultural heritage is growing in the society and conservation (usually, in Madrid, there are only conserved the façades) is encouraged over substitution. Although this is very positive in general, a rational and deep reflection about the original way of construction and the consequent rehabilitation process itself is missed.

The essential purpose of this paper is to study the origin, evolution and functional distribution of rooms throughout these three centuries and how these changes can be reflected in their structural organization. This study follows three main lines: 1) investigation and selection of the most relevant documents of the 17th to 19th centuries; 2) arrangement and chronological classification, and 3) typological structural classification of them. The main point of the documental approach of this paper is an investigation work based upon the Historical Archives of Madrid and contains: a) graphic information including elevations of the façades, floor plans, sometimes displaying the functional distribution of rooms, and much more rarely, cross sectional views of the building, and b) written information about contracts of works, work conditions, records, architects, clerks of works, etc.

The main structure of this paper follows the next lines: 1) documental historical approach, 2) structural organization of the domestic architecture and, 3) contracts of works: functional distribution of rooms.

DOCUMENTAL ANALYSIS

The documental historical approach made to reach the aim of this paper follows two main lines: 1) Madrid by-laws, and 2) The original documents found in Madrid historical Archives, that is, a) Archivos de la Villa Secretaría, AVS, and b) Archivo histórico de Protocolos, AHP. The unity system employed in all of these documents are typically castillian feet, castillian finger, etc, and it was not substituted until the end of the 19th century, when the international unity system was generally introduced in works. We will next analyse each type of document.

Madrid by-laws

In this section we have consulted Madrid by-laws beginning a) with those written by Torija in 1661; this by-laws were not real ones as it was not compulsory to follow them, but they served as treatises or guides of construction for builders during two centuries; b) those written by Ardemans in 1719 which were a

recopilation of the previous ones and were also employed as guides of construction for people involved in works, c) the by-laws published during the 19th century (1847, 1854, 1862, 1892): the last ones attended mainly to urban aspects of building design in Madrid, that is, the definition and classification of streets according to building height, which served as a social indicator (the principal or first floor were reserved for upper social class and last floors and attics for workers or lower social class); and finally d) the New Ensanche's by-laws (1860): at the end of the 19th century a new by-law was published restricted to those new houses that could be built in the new urban areas created in Madrid, the new barrios or also called the «Ensanche». This type of document do not really advance many ideas about the practical distribution of rooms but regulates the maximum height allowable in the buildings.

Madrid Archives

The graphic and written original documentation of the functional distribution of rooms in Madrid houses built along these centuries is studied in this section as follows: a) documents found in the Archivos de la Villa Secretaría, AVS, and b) contracts consulted in the Archivo Histórico de Protocolos, AHP.

Archivos de la Villa Secretaría, AVS

This archives are very deep related to the graphic information as they content all the elevations of the façades (it was compulsory to be approved by the local government before carrying out the works) built in Madrid in these period of time. But in what concerns of the functional distribution of rooms, and the information contained in the cross sections, mostly for those houses built in the early years of 17th and 18th centuries, was not often presented. As the 19th century goes forward, the graphic information is more detailed showing in most of the documents analysed not only the façade or several façades when there were, but the individual plans of the different floors, that is, ground floor, first or main floor, second floor and mainly in 19th century third floor; the graphic information of the caves and the attics is only occasionally showed.

In this archives we will show the type of document containing the works licence application; the graphic information including: floor plans, in most of the contracts selected displaying the functional distribution of rooms, the elevation of the façades, some cross sections and a graphic scale in castilian feet; and a written information about the people involved in works, such as, architects, clerks of works, owners, builders, construction systems employed, prices of the materials before arriving at works and final construction prices.

Archivo Histórico de Protocolos, AHP: the contracts of work

Once the previous introductory ideas have been set out we can advance that the essential purpose of this paper is to work out an evolution of the essential ideas that layed in the contracts of works found in the last investigation work done in the Historical Archives of Madrid, AHP, after making a transcription of the original documents. To a better understanding we will follow a chronological study of them. As we mentioned in the previous section, in this contracts we will be also analysing: the type of contract document: 1) new houses construction, 2) rebuilt houses, 3) repairing contracts, 4) houses division documents, 5) title deeds, 6) expert valuation of the houses, 7) renting contracts, etc; the graphic information, that is, floor plans, in most of the contracts selected displaying the functional distribution of rooms, elevation of the façades, cross sections, the graphic scale, and the written information, such as, the explanation of the functional distribution of rooms.

MAIN STRUCTURAL ORGANIZATION

From a structural point of view, the main structure of the building was organized, basically, with several bays or spans placed parallel to main façades with a separation of around 15–20 feet and a main court of around 20 feet × 15 feet, placed next to the second span in where the wall sections decreased in respect to the main wall or façade. The construction consisted of a structural wood framework both vertical and horizontal, usually called «entramado» placed over a foundation and a ground floor built both totally with

masonry from the main floor or «cuarto principal» until the roof. The basic criterium to build them lied in the width of the «carrera», that is, the beam placed horizontally in the walls, and from it they dimensioned the rest of the wood structural elements, decreasing in width as the house grew higher. The spaces left between the vertical and horizontal wood elements were filled with different materials, such as bricks, rough masonry work, sun-dried brick, etc.. Also the construction of the roofs was solved with a wood structure. This historical construction systems made of wood, in what concerns of the main wooden elements dimensions employed, were perfectly regulated and controlled by the local government at least from the 17th century, and later on were slowly being substituted by masonry work as most by-laws of that time reflected.

Vertical structure

The maximum height allowable for each floor was controlled, as it has been reflected in the table 1, by the local government throughout the different by-laws, so the main vertical wooden elements length depended on it, that is, a) the cellar height was usually of around 9 feet height (2.60 meters) and they were totally built with masonry work, b) the ground floor was also built with masonry and had more than 14 feet height (around 4,0 meters), c) the main floor was basically built with a wooden framework or totally

with masonry of more than 10 feet high (around 3,0 meters); d) the second floor, third floor, fourth floor, etc, of around 10 feet (aproximately 3,0 meters), and e) the attics height started to be controlled in the 19th century and they should be of more than 9 feet height (2.60m). An example of it can be seen in figure 1.

WOOD STRUCTURAL ELEMENTS MAINLY USED					
NAME		DIMENSIONS			
		Length feet	Width feet/fg	Height feet/fg	
VIGAS	VIGA DE MEDIA VARA	< 30 > 30	1 ½ f	1 f	□
	VIGA DE PIE Y CUARTO	< 30 > 30	1 1/4 f	1 f	□
	VIGA DE UN PIE TERCIA Y CUARTA	< 30 > 38	1 f	3/4 f	□
	VIGA DE CUARTA Y SEXMA	22-30 > 30	3/4 f	½ f	■
VIGUETA	VIGUETA DE A 22	22	3/4 f	½ f	■
	MEDIA VIGUETA DE A 12	12			■
MADEROS	MADERO DE A 6	18	11 1/2 fg	8 fg	■
	MADERO DE A 8	16	9 fg	7 fg	■
	MADERO DE A 10 DOBLE	14	7 fg	5 fg	■

Table 1



Figure 1
Vertical structure. C/ Ventura de la Vega

The vertical structure was organized as follows: a) main walls, b) secondary walls or thin walls, c) partywalls, and d) partitions.

a) The main walls were built in the main bays or spans, that is, they were located in the main façades, in the internal walls following the direction of façades and in the interior court walls. These main structural walls usually decreased in section as the façade wall grew higher being the wall initial width around 3.0 feet and this section was reduced a quarter of a foot each upper floor until the last one which had 22 feet width.

b) The thin walls, «cítaras» or «tabicones» (or thick partitions) were secondary or «traviesa» walls

that cut main walls perpendicularly. They had a width of 3/4–1 foot (21–28cm) and were located in interior court walls, interior walls and staircases. The section of the wood elements used in the «cítaras» also decreased as the house grew higher. That is, the ground floor used beams of *tercia*, the main floor used beams of *sesma*, the second floor beams of «maderos de a 6», the third floor beams of «maderos de a 8», and so on.

c) The main structural function of the party-walls was the lateral or back separation of neighbouring houses. They had a width of 3/4–1 foot (21–28 cm). Clerks of works used to build them perpendicular to main walls and to the rear of houses. As with the main walls discussed previously, the vertical section of masonry party walls also decreased with height, being reduced by around 1/4 feet in width at each floor. In this way party-walls had a typical width of 3.25 feet at the ground floor, 3.0 feet at the main floor, and so on until the roof.

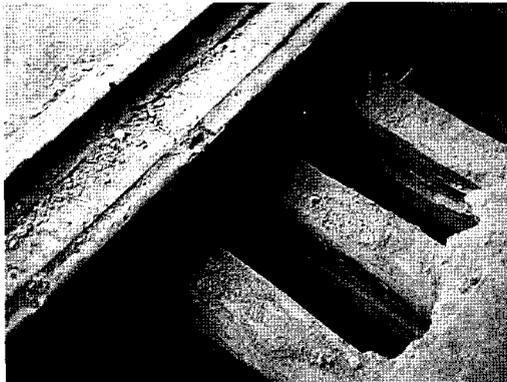


Figure 2
Wood horizontal structure. C/ Relatores

Horizontal structure

Historically floors were built in wood until the end of 19th century, when they began being built with steel beams. The horizontal structure, as it can be seen in figure 2, consisted of a frame of timber beams supported in main walls covering main spans of floors; in buildings of only one bay (span), for very small distances (3.0–4.0) meters, the beams were directly

supported on the masonry or timber-framed walls; when the spans were of medium length, that is, (5.0–7.0) meters, the beams were placed perpendicular to main walls and small beams following the direction of main walls; in those houses with large spans, that is, (8.0–9.0) meters, it was recommended to build the house with two bays (spans) following the timber beams the longitudinal direction. The perimeter supports were solved whether in the lateral party-walls or in the façade and back court walls. The central supports were solved with pillars or with secondary walls or «cítaras». Even if the spans were in every floor the same, the section of the timber framed floors could vary depending on the height of the house: main floor, second floor, third floor, etc.

FUNCTIONAL DISTRIBUTION OF ROOMS

The inclusion in the houses functional distribution of rooms of several spaces destined to a concrete domestic function, such as, courts with a well, kitchens, dormers or attic windows («boardillas»), windows at street level in cellars («lumberas» or «troneras»), etc, as most contracts and records of works in the historical archives mentioned, always were a concern in the construction process but, as it was not compulsory to sign a contract of work before building a new house, there are not many documents in which this evolution can be studied. Nevertheless in those analysed showed an original information mainly for two reasons: the scant investigation work done until today in this subject, and the relevant details that can be studied if compared them altogether. The main functional distribution of rooms attending to the people that owned the houses can be classify in two groups: a) Individual houses, and b) Tenment houses or renting houses and among them, the typical and so called «corralas».

Individual houses: general functional distribution of rooms

This houses had an owner who lived in the so called first floor or main «room» and other floors or rooms used for «servants» or for renting them. Usually when relating to Madrid houses is very often seen to called each floor as «cuartos». Historical houses built in Madrid, principally

those placed in main streets, often had stores in the ground floor and cellars or undergrounds under them. Both were communicated by staircases or even provisional stairs. Typically the houses had four or five floors over the cellars: ground floor, main floor, second, third and attics (roofs), depending on the width of the street they faced. We will study all these aspects starting from the underground level.

Underground floor or cellar (also called «cueva»)

As we can see in the façades plans they used to build an underground floor or a cellar of around 9 feet under the street level. It was communicated with the ground floor by a staircase and sometimes even with a provisional ladder. Usually they opened small windows called «lumbres» facing the main façades to ventilate and to light them.

Ground floor

If the house had a cellar, the ground floor was usually elevated some feet above the street level. We can find a wide information about the functional distribution of rooms at this point because it was nearly the only floor drawn. The houses usually had two entrances in the main façade: 1) a big door destined to the livery stable and linked with the stable and an interior court with a well, and 2) a house main entrance with an entrance-hall («zaguán») and linked with the main staircase. This functional distribution of rooms can be seen in the following document containing an elevation of the façade and two floor plans: the ground floor with the following distribution: 1. entrance-hall, 2. way to the stable, 3. main staircase, 4. main «sala», 5. second «sala», 6. secondary «sala», 7. «alcoba», 8. stable, 9. livery stable, 10. courtyard, and in the first or main floor with the numbers: 1.

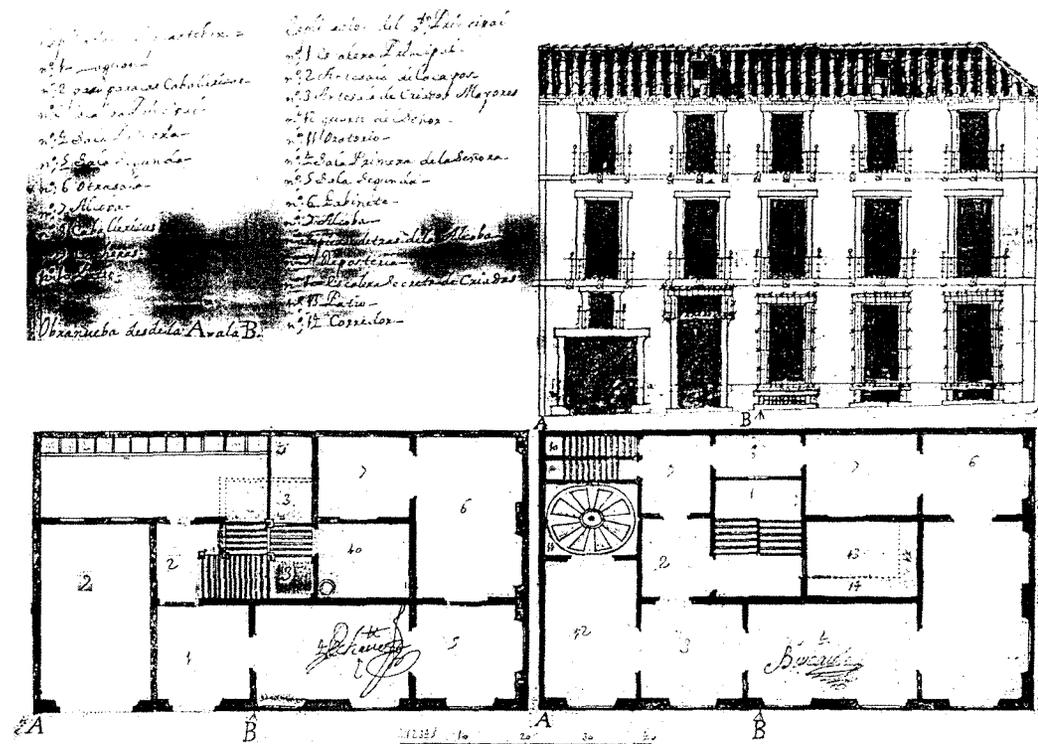


Figure 3

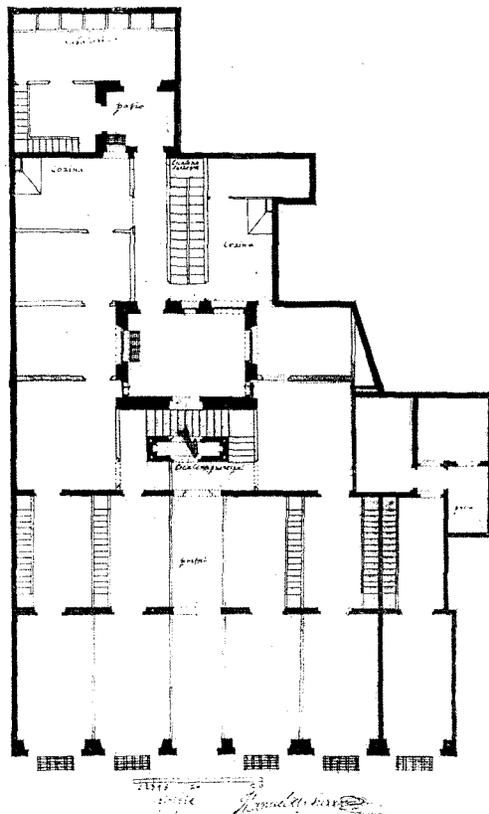


Figure 4
House built in the Puerta del Sol (1729). 1.66.136

main staircase, 2. servants anteroom, 3. old servants anteroom, 4. main lady's room, 5. secondary lady's room, 6. «gabinete» or lady's private sitting room, 7. «alcoba», 8. secondary «alcoba», 9. Pastry, 10. secret staircase for servants, 13. court, and 14. corridor. The document from 1737 which is shown in figure 3, doesn't contain information about the second floor, but the main structure was similar to the first floor.

The main room was the living-room or «sala» nearly always linked to another room which had neither light nor possible ventilation called «alcoba». Depending on the depth of the ground, the house could have one court of around 20 feet by 15 feet, or several courts, usually with a well and with the kitchen near them. When there were a secondary court, it had often a secondary staircase, a kitchen and

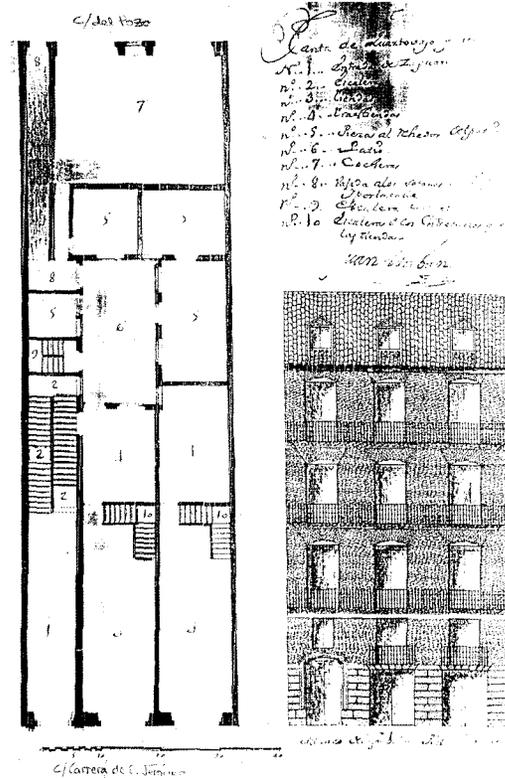


Figure 5
House built in C/ Carrera de S. Jerónimo y c/ del Pozo (1750). AVS. 1.84.128

the servants rooms linked to it, as it is shown in figure 4. The construction of courts, was one of the most important «pieces» of a Madrilenian house as they served to light and ventilate the interior rooms, but its construction was not regulated until the by-laws of the last 19th century. In nearly all of the houses there were «rooms» called «alcobas» without any possibility of lighting nor ventilation, which remained linked to a main room.

First floor or main floor

Sometimes the ground floor faced totally to a commerce street and all the rooms at street level were not living rooms but secondary ones whether

«cocheras», kitchen, houses stores, or destined to shop stores, leaving in that case the upper floor, that is, the first floor, as the main one. This can be seen in the figure 5 shown below. In this case the house faced two streets, to the main one, c/ Carrera de S. Jerónimo, three rooms, the main entrance linked to the main staircase and two stores each one with an individual staircase linked to an upper floor or entresol and with a backstore facing the courtyard; and a secondary one, c/ del Pozo with the livery stable and a secondary entrance linked to secondary rooms: the cellar, a secondary staircase and some rooms around the court. The functional distribution of rooms is the following: 1. entrance hall, 2. staircase, 3. store, 4. backstore, 5. rooms around the court, 6. court, 7. livery stable, 8. way down to the cellar, 9. secret stairs, 10. stairs to the entresol. As in the previous figure there is no information about the rest of the floors: first floor or main floor, second, third and attic. In the upper floors the access to the interior rooms was solved by the corridor, a narrow way built over the courts.

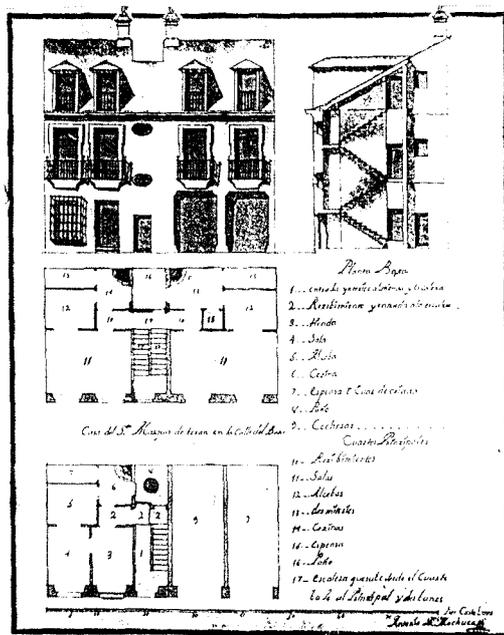


Figure 6
Marqués de Terán's house in the C/ del Barco (1760). AVS 1.45.87

Second floor, third floor, etc:

This floor had a very similar organization as the first or main floor and repeated the basic organization of the functional distribution of rooms. The main rooms faced the streets and the secondary rooms, kitchens, servants rooms, etc, were left to the back part or to interior courts.

Last floor or attics

In the last floor of the houses there were the so called «desván or buhardillas» which were not living rooms (the height was of very few feet) but, in practice, they were in the early years the servants rooms and later on, in the 19th century, when owners started renting the houses to workers, the home for several families which couldn't afford a better lodgement. One of this kind of houses shown in the figure 6, is organized following the main ideas explain in the previous lines. The information about the functional distribution of rooms is the following: 1. entrance to the store, the «alcoba» and livery room, 2. receiving room and entrance to the staircase, 3. store, 4. living-room, 5. «alcoba», 6. kitchen, 7. servants room and storeroom, 8. court, 9. livery stable, and in the main floor with the numbers 10. receiving room, 11. rooms, 12. alcobas, 13. bedrooms, 14. kitchen, 15. store, 16. court, and 17. main staircase.

In 17th and 18th centuries the houses often had a yard or «corral» in the back part of the house with a simple adobe wall which separate those from the neighbouring but, as the town was growing, new houses were built in the backpart often with no lightint to streets but to interior courts.

The possibility of building attic windows or dormers existed during 17th–19th centuries and was a controversial subject in the by-laws of domestic architecture in Madrid. Due to health and hygien considerations, it was frequently debated whether to allow or to forbid them. From a construction point of view, Ardemans (1716) and some other clerks of works always pointed out that they should be built in the same vertical line as main walls and ligned with windows and balcon and never facing party-walls. At the end of 18th century, Villanueva (1790) suggested to suppress them, «as the experience always reveals that through them the fire spreads

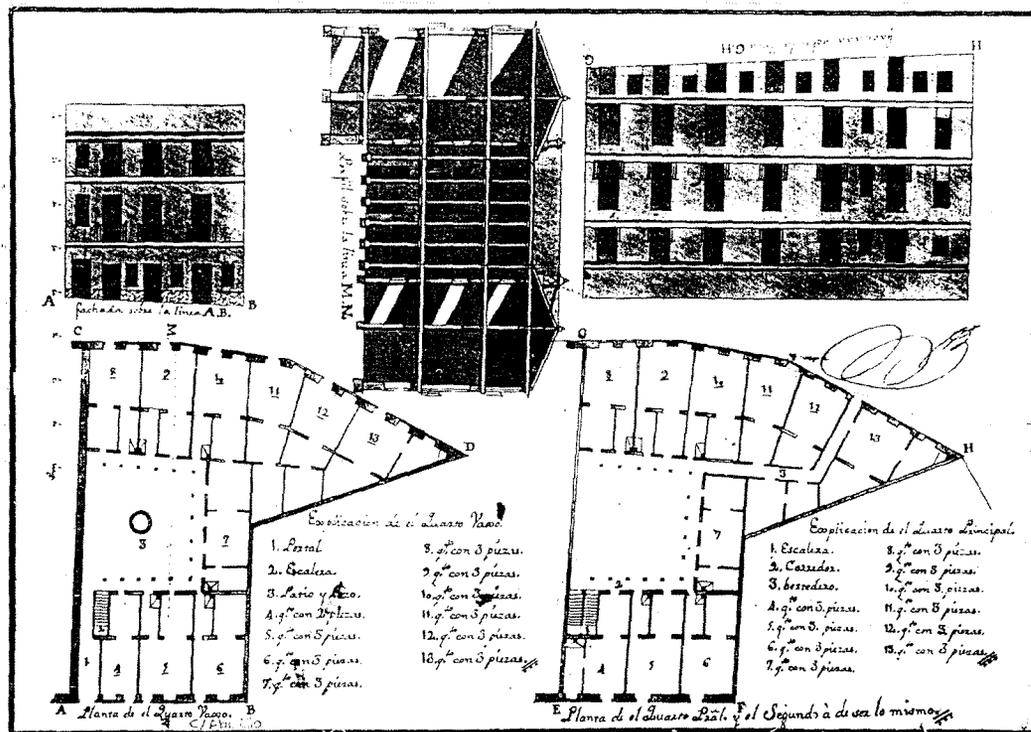


Figure 7
A «corralas» house built in Madrid in 1757. (AVS 1.45.140)

promptly». Nonetheless they would not be forbidden until the «Reales Órdenes» of 1854. In the «by-laws of 1892 this prohibition is kept and also the fact of allowing to use attics as living rooms, except those placed at the backs and which were over 9,0 feet in height.

Community houses or renting houses

The «corralas houses» is a typical community madrileñian house built along these three centuries and some still survey in the historic centre of Madrid. The «corralas» walls were made of open wooden framing of vertical and horizontal timber elements which supported the galleries around the interior courtyard. Its basic structural organization is a quite big central court with a staircase and several small «lodgement unities» or «cuartos»

displayed around it. At street level or in the so called «cuarto baxo» the entrance was directly from the court and in the upper floors, usually only two more, the main floor or «cuarto principal» and a second floor, both with the same functional distribution of rooms, had a corridor all around the central court which served to get to the different «cuartos». Each lodgement unity was very small and has usually three rooms or pieces: a main one or «sala» with balcon to the street if it faced to both sides, the street and the court, and two small ones linked to the corridor at the court: the kitchen with a small window and a room at the entrance. This general structural organization can be clearly seen in the figure 7 shown below with the following numbers, in the ground floor or «cuarto baxo»: 1. entrance, 2. staircase, 3. courtyard and well, 4. lodgement with two rooms and from number 5 to number 13 all the lodgements with three rooms and,

in the main floor, and as it is said in the plan with the same structure for the second floor, the following functional distribution of the lodgements: 1. staircase, 2) corridor, 3) dumping place, and from number 4 to number 13 all the lodgement unities with 3 rooms,

In what concerns the regulation of including a special room in each house for a toilet did not exist until the end of 19th century. First the toilets were the farmyard of the houses, later on works included a community toilet, called the «comun», located at the end of a community corridor, and in the last years of the 19th century the new by-laws in the new urban areas of Madrid included several regulations about it, but even in the 20th century many unity lodgement had not an individual toilet.

THE CONTRACTS OF WORK

In the previous section we have shown a general revision of the main functional distribution of rooms. In the following lines we analyse the main contents of the contracts of works related to this purpose following a chronological exposition of the contracts of work. This study also includes the most relevant plans of each period of time and some parts of them which have been literally transcribed.

The contracts of work in 17th century

The first document analysed in this paper is a contract of work of a house built in Madrid in 1626 which

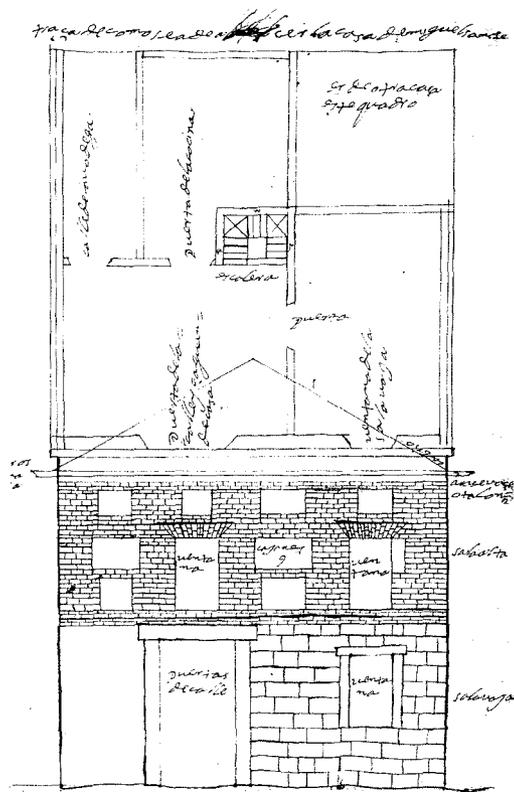


Figure 8
House built in Madrid in 1626. Ground floor and elevation of the façade. AHP. N° 38.028

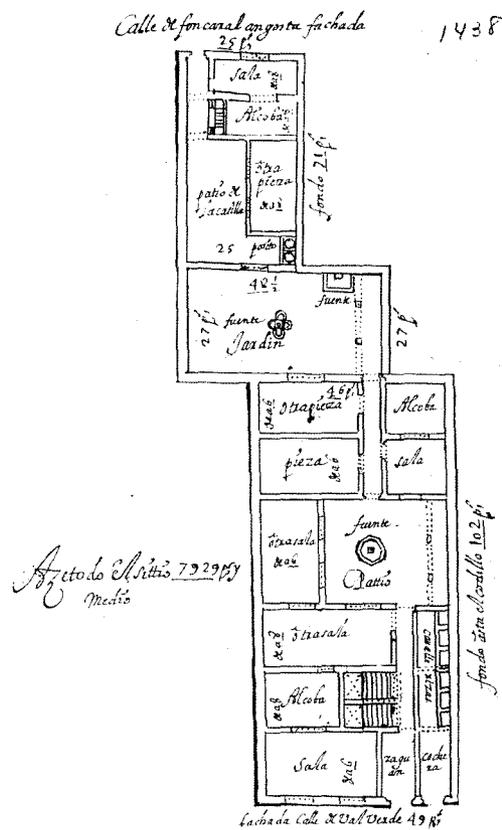


Figure 9
House built in Madrid in 1694. AHP N° 12.259

floor: 1. staircase, 2. «sala» or main room, 3. «alcoba», 4. room, 5. dining-room, and 6. kitchen; and in the third plan: 1. staircase, 2. Dormers, 3. Corridor, 4. two rooms and 5. kitchen.

The next document selected in this section is a very detailed new house building contract containing graphic and written information about the functional distribution of rooms. Related to the first one and as we show in the original document in figure 11, the distribution of rooms is as follows: 1. main façade, 2. entrance hall, 3. main staircase, 4. livery stable, 5. «Cuarto bajo facing the street, 6. Interior rooms, 7. corridor, 8. rooms imposible to get to them in the upper floors, 9. main courtyard, 10. small courtyard, 11. rooms facing the small courtyard

... Plan de la casa del señor D. Francisco Gedeon y Hinojosa, de la Calle de la Magdalena, se entenderá del modo siguiente. Fachada principal a dicha calle de la Magdalena se demuestra con el numero 1. Zaguán nº 2.

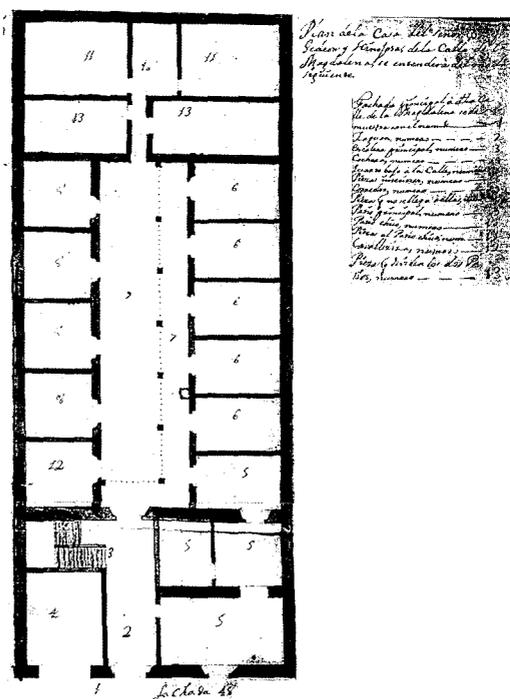


Figure 11
Rebuilt house contract. AHP Nº 16.430 (1737)

Escalera principal nº 3. Cochera nº 4. Cuarto bajo a la calle nº 5. Piezas interiores nº 6. Corredor nº 7. Piezas que no se llega a ellas nº 8. Patio principal nº 9. Patio chico nº 10. Piezas al patio chico nº 11. Caballeriza nº 12. Piezas que dividen los dos patios 13 . . . AHP Nº 16.430 (1737).

Related to the written information, it makes a general description of the main structural way of building it literally says:

... Primeramente a dicha Calle de la Magdalena se ha de labrar en sus quarenta y ocho pies de líneas que tiene de fachada, en lo bajo a la izquierda de su entrada un cochera, y sobre ella y el resto de habitaciones bajas en sus dos crugias, un cuarto principal, precediendo para ello primero el repaso que necesitaren las paredes Maestras, que oy ay, como tambien en la linea de mano derecha de su entrada, se ha de labrar dos crugias de piezas, una de quartos bajos; otras sobre ellos al piso del quarto principal, que va mencionado, con su corredor de cinco pies de ancho, precediendo primero para él de las basas de barro que sean convenientes y sobre ella sus pies derechos con sus zapatas y en el segundo cuerpo sus pies derechos, y de uno a otro sus antepechos de tabique y cubiertos con cielo raso de quadrado: de modo, que todo lo que ay que labrar desde los cimientos a los tejados, demuestra en el Plan el numero 6. Y el numero 7. El numero 5. El numero 2. El numero 3. Y numero 4. Y numero 12. Y se previene que los demas numeros del Plan son piezas antiguas, las que han de quedarse como oy están, que todo lo expresado, executado con madera de Corral y buena mezcla de cal y arena, con los demás materiales que para ello se necesitan, puertas y ventanas con sus errages. . . . AHP Nº 16.430 (1737).

The next document is an expert valuation of three houses. For the three of them, the main structure of the document is very similar: a) an emplacement description, b) the house and the construction systems employed description, and c) the final valuation of both, the emplacement and the house. The most relevant information shown for this paper is related to second part, the distribution of rooms and we will refer only to it. For the first valuation, the house rooms are the following ones (the plan shown in figure 12 is related to the main floor) beginning from the C/ Flor Alta: living-room, «alcoba», kitchen, servants room, dining-room linked to the courtyard, courtyard with its corridor, receiving room and main staircase, and in the opposite street, beginning from the staircase: receiving room, courtyard linked to an

que cae â la fachada de la calle de la Cueva . . . N° 16.366 (1741).

For the second house there is not any relevant information related to its rooms, and about the third one it says:

. . . Y haviendole dado a este su justto valor, como â la vivienda de una tienda Cuchilleria, con su pieza dettras y devajo un poco de cueva, y pedazo de sottano, y enzima de la tienda su desban gattero. A la fabrica que es una tienda trastienda, escalera para subir âl quarto principal que se compone de sala y alcobamiento estrecho y todo mui malttrattado, valen segun âl presente se hallan, sittio y fabrica, diez mill ciento y seis Reales Vellon . . . N° 16.366 (1741).

The next document studied in this section, is as the one mentioned just above, another expert valuation of a house, this document shown in figure 13 follows the same structure as the previous one being in this case a house with a «wine cellar». In what concerns the functional distribution of rooms it contains: main entrance hall, thirteen rooms, a wine cellar and a wine press, two rooms, two courtyards and a staircase. The most relevant information is mentioned nextly, it says

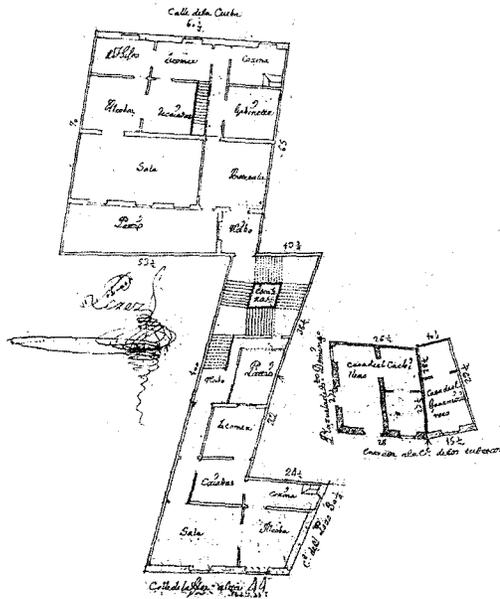


Figure 12
Plan of the houses. AHP N° 16.366 (1741)

anteroom and the living-room this one beside the «alcoba» and the servants room with a secondary staircase, a no lighted private room and facing the backstreet c/ de la Cueva: the dining-room, the kitchen and the childrens room. They are mentioned in the next lines the main distribution of rooms

. . . Como se demuestra en el mapa que queda figurado, hacen de area superficial: siete mil ciento y veinte y ôcho pies y medio quadrados de sittio, con lo que le tocâ y pèrtenece de sus medianerias, â los quales dandoles su justto valor, como â la fabrica de que se componen sus viviendas; y es en la fachada principal en lo bajo su zaguan, patty, cochera, y cavalleriza en los sottanos, y la escalera principal; un quarto principal de siete piezas y enzima quarto segundo y tercero, cada uno de seis piezas y un paso y desde dicha escalera principal se manda para un quarto bajo y un principal, cada uno de nueve piezas,

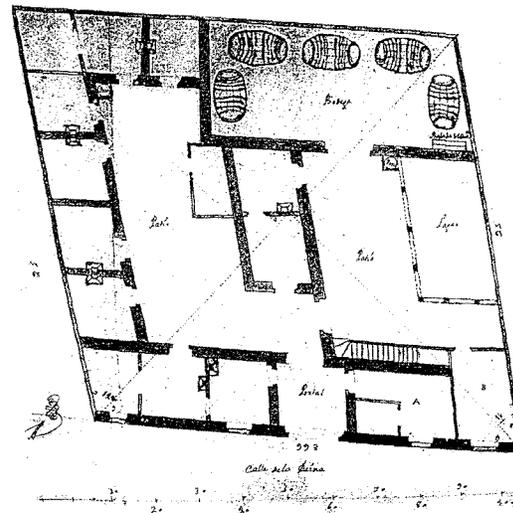


Figure 13
Wine cellar house. AHP N° 16.300 (1742)

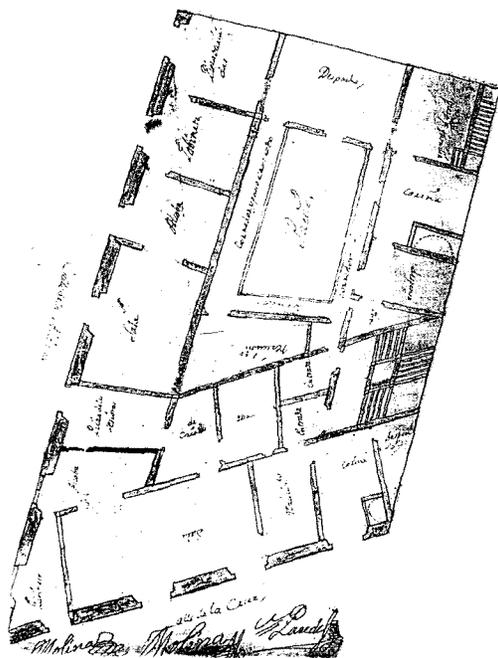


Figure 14
House built in Madrid in 1745. AHP N° 16.968

... Asimismo ha medido la avittazion de que se compone dicha cassa que es porttal, trece piezas, lagar y bodega todo a teja barra y dos piezas de suelos de bobedillas que son las que señalan el dicho y dos pattios todo ello segun conforme se demuestra en la plantta adjuntta. Y su fabrica se compone de zimientos de piedra de pedernal, tapias a piedra y pilares de albañileria, zerramientos de taviques, suelos de bobedillas de madera de â ocho, armaduras de la misma madera y de a seis, chimeneas, puertas y venttanas con sus errages, dos rexas en la fachada de la calle, lagar, solado de losas verroqueñas. Dos pozos empedrados, la maior parte de la cueba vesttida de fabrica de albañileria, zinco cubas pilon, viga, y 8 sillo, veinte y ocho tinajas de diferentes tamaños contando lo demas de que se compone dicho sittio y pelttrechos de Bodega ... AHP N° 16.300 (1742).

The next and last document of this 18th century that we have studied here, is a contract of work of a house built in a corner of the C/ de la Cruz and c/ de la Aldava in 1745, which is as follows.

... Y el quarto segundo que oi son desvanes se ha de formar dos quartos vivideros de sala, alcoba, cozina, y dos piezas, el uno â la calle de la Aldava, y el otro â la de la Cruz, y lo restante del centro de dicha casa se han de dejar viviendas para los criados que han de servir en las viviendas de los quartos principales. Y se de hazer pajar y blanquear â lecho todas las viviendas y hazer quatro chimeneas para las quatro viviendas nuevas y en los quartos de los criados las que fuesen precisas dejandolo rematado todo de yeso negro y blanco y la escalera principal, y hazer corredores de tabicado en dichos quartos para su comoda habitazion poniendo las puertas nuevas que faltasen con todos sus herrajes y en las viejas los que faltasen como en las venttanas que oi tiene aprovechando toda la madera teja y tabla que fuese de provecho como puertas, venttanas y balcones y los que no se an de hechar nuevos como recorrer todos los solados de todas las habitaciones de dicha casa, y se â de revocar las dos fachadas y quartos nuevos que se hagan, y rematado ... AHP N° 16.968 (1745).

CONCLUSIONS

Houses built in Madrid had in general a very large depth ground related to the extend of the main and secondary façades which obligated to built a sucesion of several courts to light and ventilate the interior rooms, but they still left many rooms without any possibily of lighting nor ventilation, the so called «alcobas». The regulation of including a toilet didn't appear until the last years of 19th century building them, in general, in the corridors. Houses had several staircases, the main one was near the door entrance and a secondary one was in general built in the last part of the house and near the kitchen and the servants room. Related to the main dimensions of the structural elements, the historical approach made throughout the documents analysed verified the uniformity of the structural wood elements, both vertical and horizontal, used to build the frames along this time, so the small variation of the functional distribution of rooms did not have an effect on the structural organization of the houses construction.

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